



CHEMISTRY

BOOKS - KUMAR PRAKASHAN KENDRA CHEMISTRY (GUJRATI ENGLISH)

ORGANIC CHEMISTRY SOME BASIC PRINCIPLES AND TECHNIQUES

Section A (General Introduction)

1. Write important of organic chemistry

 [View Text Solution](#)

2. Write history and development of organic chemistry

 [View Text Solution](#)

3. Write about the shapes of carbon compounds and effects of hybridisation of carbons

 [View Text Solution](#)

4. Explain characteristic of π bonds

 [View Text Solution](#)

5. Give the requirements for formation of π bonds and explain active centre

 [View Text Solution](#)

6. Write important of organic chemistry

 [View Text Solution](#)

7. Write history and development of organic chemistry

 [View Text Solution](#)

8. Write about the shapes of carbon compounds and effects of hybridisation of carbons

 [View Text Solution](#)

9. Explain characteristic of π bonds

 [View Text Solution](#)

10. Give the requirements for formation of π bonds and explain active centre

 [View Text Solution](#)

Section A (Structural Representation of Organic Compounds)

1. Explain by examples: (a) Complete (b) Condensed and (c) Bond-line structural formulas

 [View Text Solution](#)

2. Explain three dimensional representation of organic molecules and give examples

 [View Text Solution](#)

3. Explain by examples: (a) Complete (b) Condensed and (c) Bond-line structural formulas

 [View Text Solution](#)

4. Explain three dimensional representation of organic molecules and give examples

 [View Text Solution](#)

Section A (Classification of Organic Compounds)

1. Give classification of organic compounds

 [View Text Solution](#)

2. Explain acyclic or open chain compounds with examples

 [View Text Solution](#)

3. Which are alicyclic or closed chain or ring compounds? Give examples

 [View Text Solution](#)

4. Give primary information and examples of aromatic compounds

 [View Text Solution](#)

5. What is functional group ? Give example

 [View Text Solution](#)

6. What is homologous series ? Give example

 [View Text Solution](#)

7. Give classification of organic compounds

 [View Text Solution](#)

8. Explain acyclic or open chain compounds with examples

 [View Text Solution](#)

9. Which are alicyclic or closed chain or ring compounds? Give examples

 [View Text Solution](#)

10. Give primary information and examples of aromatic compounds

 [View Text Solution](#)

11. What is functional group ? Give example

 [View Text Solution](#)

12. What is homologous series ? Give example

 [View Text Solution](#)

Section A (Nomenclature of Organic Compounds)

1. What is IUPAC (modern) and common method for nomenclature of organic compounds?

 [View Text Solution](#)

2. Explain about IUPAC nomenclature method in short

 [View Text Solution](#)

3. Give number of carbon and its name in alkane

 [View Text Solution](#)

4. Write formula and name about alkyl groups

 [View Text Solution](#)

5. Give the rule for IUPAC nomenclature for branched compounds. Explain with example

 [View Text Solution](#)

6. Give definition, general characteristics and use of functional group

 [View Text Solution](#)

7. Give some functional groups, its examples, prefix, suffix and class of organic compounds

 [View Text Solution](#)

8. Give rules of nomenclature of organic compound containing one or more functional group

 [View Text Solution](#)

9. Write about nomenclature of benzene substituted compounds

 [View Text Solution](#)

10. What is IUPAC (modern) and common method for nomenclature of organic compounds?

 [View Text Solution](#)

11. Explain about IUPAC nomenclature method in short

 [View Text Solution](#)

12. Give number of carbon and its name in alkane

 [View Text Solution](#)

13. Write formula and name about alkyl groups

 [View Text Solution](#)

14. Give the rule for IUPAC nomenclature for branched compounds.

Explain with example

 [View Text Solution](#)

15. Give definition, general characteristics and use of functional group

 [View Text Solution](#)

16. Give some functional groups, their examples, prefixes, suffixes and classes of organic compounds

 [View Text Solution](#)

17. Give the rules of nomenclature of organic compounds containing one or more functional groups

 [View Text Solution](#)

18. Write about the nomenclature of benzene substituted compounds

 [View Text Solution](#)

Section A (Isomerism)

1. What is isomerism? Which are the types of isomerism?

 [View Text Solution](#)

2. What is chain isomerism? Explain by giving example

 [View Text Solution](#)

3. Give definition of position isomerism and Example

 [View Text Solution](#)

4. What is functional group isomerism? Explain by suitable example

 [View Text Solution](#)

5. What is metamerism? Give example

 [View Text Solution](#)

6. What is stereoisomerism? Which are its types?

 [View Text Solution](#)

7. What is isomerism? Which are the types of isomerism?

 [View Text Solution](#)

8. What is chain isomerism? Explain by giving example

 [View Text Solution](#)

9. Give definition of position isomerism and Example

 [View Text Solution](#)

10. What is functional group isomerism? Explain by suitable example

 [View Text Solution](#)

11. What is metamerism? Give example

 [View Text Solution](#)

12. What is stereoisomerism? Which are its types?

 [View Text Solution](#)

Section A (Fundamental Concepts in Organic Reaction Mechanism)

1. In organic reaction explain reactant substrate and products obtain from these by common reaction. What is the mechanism of the reaction?

 [View Text Solution](#)

2. What is Fission of a covalent bond? Explain its type with example and main difference

 [View Text Solution](#)

3. Explain heterolytic cleavage of organic compound (b) Carbanions by examples

 [View Text Solution](#)

4. What is homolytic cleavage of covalent bond? Explain by example

 [View Text Solution](#)

5. Write about bond cleavage and intermediate free radical

 [View Text Solution](#)

6. In organic reaction explain reactant substrate and products obtain from these by common reaction. What is the mechanism of the reaction?

 [View Text Solution](#)

7. What is Fission of a covalent bond? Explain its type with example and main difference

 [View Text Solution](#)

8. Explain heterolytic cleavage of organic compound (b) Carbanions by examples

 [View Text Solution](#)

9. What is homolytic cleavage of covalent bond? Explain by example

 [View Text Solution](#)

10. Write about bond cleavage and intermediate free radical

 [View Text Solution](#)

Section A (Fundamental Concepts in Organic Reaction Mechanism)

1. In the organic reaction by fission of bond, which intermediate species form? Write species and explain their stability

 [View Text Solution](#)

2. Give intermediates produced by fission of bond and write its main characteristics

 [View Text Solution](#)

3. What are electrophiles and nucleophiles ? Explain with examples



[View Text Solution](#)

4. Give differences between electrophiles and nucleophiles



[View Text Solution](#)

5. Explain electron movement in organic reaction



[View Text Solution](#)

6. Explain electron displacement effect in covalent bonds



[View Text Solution](#)

7. Write about Inductive effect



[View Text Solution](#)

8. Explain with suitable example that the resonance structure of molecule do not represent real structure and they are hypothetical

 [View Text Solution](#)

9. Give resonance structure of nitromethane and explain its real structure

 [View Text Solution](#)

10. What is resonance energy? Write about its value

 [View Text Solution](#)

11. Give rules for writing resonance structure

 [View Text Solution](#)

12. Rules for to decide relative stability for different resonance structure



[View Text Solution](#)

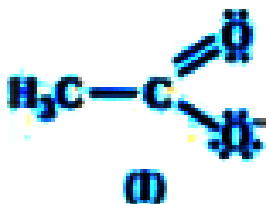
13. (i) Identify less stable resonance structure and (ii) Give its reason in the following pairs.



and



and



and



and



and



View Text Solution

14. What is the effect of resonance? Write about its types ?

 [View Text Solution](#)

15. What is the positive and negative resonance effect ? Explain with examples

 [View Text Solution](#)

16. What is conjugate system ? Give examples and its effect

 [View Text Solution](#)

17. Explain Electromeric effect and write about -its types

 [View Text Solution](#)

18. Explain why alkyl groups act as electron donors when attached to a π system.

 [View Text Solution](#)

19. Explain hyperconjugation or no bond resonance with example

 [View Text Solution](#)

20. Give type of organic reaction and its mechanism

 [View Text Solution](#)

21. In the organic reaction by fission of bond, which intermediate species form? Write species and explain their stability

 [View Text Solution](#)

22. Give intermediates produced by fission of bond and write its main characteristics

 [View Text Solution](#)

23. What are electrophiles and nucleophiles ? Explain with examples

 [View Text Solution](#)

24. Give differences between electrophiles and nucleophiles

 [View Text Solution](#)

25. Explain electron movement in organic reaction

 [View Text Solution](#)

26. Explain electron displacement effect in covalent bonds

 [View Text Solution](#)

27. Write about Inductive effect

 [View Text Solution](#)

28. Explain with suitable example that the resonance structure of molecule do not represent real structure and they are hypothetical

 [View Text Solution](#)

29. Give resonance structure of nitromethane and explain its real structure

 [View Text Solution](#)

30. What is resonance energy? Write about its value

 [View Text Solution](#)

31. Give rules for writing resonance structure

 [View Text Solution](#)

32. Rules for to decide relative stability for different resonance structure

 [View Text Solution](#)

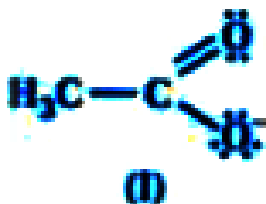
33. (i) Identify less stable resonance structure and (ii) Give its reason in the following pairs.



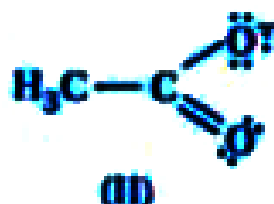
and



and



and



and



and



 View Text Solution

34. What is the effect of resonance? Write about its types ?

 [View Text Solution](#)

35. What is the positive and negative resonance effect ? Explain with examples

 [View Text Solution](#)

36. What is conjugate system ? Give examples and its effect

 [View Text Solution](#)

37. Explain Electromeric effect and write about -its types

 [View Text Solution](#)

38. Explain why alkyl groups act as electron donors when attached to a π system.

 [View Text Solution](#)

39. Explain hyperconjugation or no bond resonance with example

 [View Text Solution](#)

40. Give type of organic reaction and its mechanism

 [View Text Solution](#)

Section -A(Methods of Purification of Organic Compounds)

1. Which are the methods of purification of organic compounds?

 [View Text Solution](#)

2. How the purity of compound is decide?

 [View Text Solution](#)

3. Explain sublimation technique of purification method of organic compound

 [View Text Solution](#)

4. What is sublimation ? Give its uses and examples

 [View Text Solution](#)

5. Name a suitable technique of separation of the components from a mixture of calcium sulphate and camphor

 [View Text Solution](#)

6. Write about crystallisation technique for purification of organic compound

 [View Text Solution](#)

7. Describe the method, which can be used to separate two compounds with different solubilities in a solvent S.

 [View Text Solution](#)

8. Describe simple distillation method for purification of compounds

 [View Text Solution](#)

9. Write about fractional distillation

 [View Text Solution](#)

10. Explain distillation under reduced pressure

 [View Text Solution](#)

11. Write about steam distillation

 [View Text Solution](#)

12. Explain differential extraction

 [View Text Solution](#)

13. Explain why an organic liquid vaporises at a temperature below its boiling point in its steam distillation?

 [View Text Solution](#)

14. What is the difference between distillation, distillation under reduced pressure and steam distillation?

 [View Text Solution](#)

15. (a) Give uses of chromatography

(b) Give meaning of chromatography word

(c) Write first use of chromatography

 [View Text Solution](#)

16. (a) Give principal of Adsorption chromatography (b) Adsorbent (c)

Mobile phase and (d) What is

 [View Text Solution](#)

17. What is adsorption chromatography? Write its type

 [View Text Solution](#)

18. Write about column chromatography

 [View Text Solution](#)

19. Write about thin layer chromatography (TLC)

 [View Text Solution](#)

20. Write about partition chromatography? What is partition chromatography? Write about paper chromatography

 [View Text Solution](#)

21. Give a brief description of the principles of the following techniques taking an example in each case. (a) Crystallisation (b) Distillation (c) Chromatography

 [View Text Solution](#)

22. Explain the principle of paper chromatography

 [View Text Solution](#)

23. Which are the methods of purification of organic compounds?

 [View Text Solution](#)

24. How the purity of compound is decided?

 [View Text Solution](#)

25. Explain sublimation technique of purification method of organic compound

 [View Text Solution](#)

26. What is sublimation ? Give its uses and examples

 [View Text Solution](#)

27. Name a suitable technique of separation of the components from a mixture of calcium sulphate and camphor

 [View Text Solution](#)

28. Write about crystallisation technique for purification of organic compound

 [View Text Solution](#)

29. Describe the method, which can be used to separate two compounds with different solubilities in a solvent S.

 [View Text Solution](#)

 [View Text Solution](#)

30. Describe simple distillation method for purification of compounds

 [View Text Solution](#)

31. Write about fractional distillation

 [View Text Solution](#)

32. Explain distillation under reduced pressure

 [View Text Solution](#)

33. Write about steam distillation

 [View Text Solution](#)

34. Explain differential extraction

 [View Text Solution](#)

35. Explain why an organic liquid vaporises at a temperature below its boiling point in its steam distillation?

 [View Text Solution](#)

36. What is the difference between distillation, distillation under reduced pressure and steam distillation?

 [View Text Solution](#)

- 37.** (a) Give uses of chromatography
- (b) Give meaning of chromatography word
- (c) Write first use of chromatography

 [View Text Solution](#)

38. (a) Give principal of Adsorption chromatography (b) Adsorbent (c)
Mobile phase and (d) What is

 [View Text Solution](#)

39. What is adsorption chromatography? Write its type

 [View Text Solution](#)

40. Write about column chromatography

 [View Text Solution](#)

41. Write about thin layer chromatography (TLC)

 [View Text Solution](#)

42. Write about partition chromatography? What is partition chromatography? Write about paper chromatography

 [View Text Solution](#)

43. Give a brief description of the principles of the following techniques taking an example in each case. (a) Crystallisation (b) Distillation (c) Chromatography

 [View Text Solution](#)

44. Explain the principle of paper chromatography

 [View Text Solution](#)

Section -A (Qualitative Analysis of organic compounds)

1. How the detection of carbon and hydrogen compound? Explain with reaction

 [View Text Solution](#)

2. Discuss the chemistry of Lassaigne's test

 [View Text Solution](#)

3. In the test of halogen, why the nitric acid is added before the silver nitrate sodium fusion extract?

 [View Text Solution](#)

4. Explain the reason for the fusion of an organic compound with metallic sodium for testing nitrogen, sulphur and halogens

 [View Text Solution](#)

5. Will CCl_4 give white precipitate of AgCl on heating it with silver nitrate

? Give reason for your answer

 [View Text Solution](#)

6. Why is it necessary to use acetic acid and not sulphuric acid for acidification of sodium extract for testing sulphur by lead acetate test?

 [View Text Solution](#)

7. How the detection of carbon and hydrogen compound? Explain with reaction

 [View Text Solution](#)

8. Discuss the chemistry of Lassalagne's test

 [View Text Solution](#)



[View Text Solution](#)

9. In the test of halogen, why the nitric acid is added before the silver nitrate sodium fusion extract?



[View Text Solution](#)

10. Explain the reason for the fusion of an organic compound with metallic sodium for testing nitrogen, sulphur and halogens



[View Text Solution](#)

11. Will CCl_4 give white precipitate of $AgCl$ on heating it with silver nitrate ? Give reason for your answer



[View Text Solution](#)

12. Why is it necessary to use acetic acid and not sulphuric acid for acidification of sodium extract for testing sulphur by lead acetate test?

 [View Text Solution](#)

Section -A(Quantitative Analysis)

1. Explain the principle and estimation method for carbon and hydrogen in organic compound

 [View Text Solution](#)

2. Why is a solution of potassium hydroxide used to absorb carbon dioxide evolved during the estimation of carbon present in an organic compound?

 [View Text Solution](#)

3. Discuss about dumas method and principles for estimation of N present in organic compound

 [View Text Solution](#)

4. Write about Kjeldahl's method and principle for estimation of nitrogen present in organic compound

 [View Text Solution](#)

5. Differentiate between the principle of estimation of nitrogen in an organic compound by (i) Dumas method and (ii) Kjeldahl's method

 [View Text Solution](#)

6. Explain Carius method and its principle for estimation of halogen elements

 [View Text Solution](#)

[View Text Solution](#)

7. Write Carius method its principle of estimate for sulphur element

 [View Text Solution](#)

8. Write Carius method and its principle for estimation of phosphorus

 [View Text Solution](#)

9. Explain principle of estimation of oxygen in organic compound

 [View Text Solution](#)

10. Explain the principle and estimation method for carbon and hydrogen in organic compound

 [View Text Solution](#)

11. Why is a solution of potassium hydroxide used to absorb carbon dioxide evolved during the estimation of carbon present in an organic compound?

 [View Text Solution](#)

12. Discuss about dumas method and principles for estimation of N present in organic compound

 [View Text Solution](#)

13. Write about Kjeldahl's method and principle for estimation of nitrogen present in organic compound

 [View Text Solution](#)

14. Differentiate between the principle of estimation of nitrogen in an organic compound by (i) Dumas method and (ii) Kjeldahl's method

 [View Text Solution](#)

15. Explain Carius method and its principle for estimation of halogen elements

 [View Text Solution](#)

16. Write Carius method its principle of estimate for sulphur element

 [View Text Solution](#)

17. Write Carius method and its principle for estimation of phosphorus

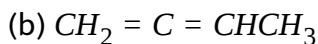
 [View Text Solution](#)

18. Explain principle of estimation of oxygen in organic compound

 [View Text Solution](#)

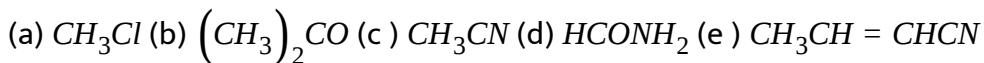
Section A -Problem

1. How many σ and π bonds are present in each of the following molecules?



 [View Text Solution](#)

2. What is the type of hybridisation of each carbon in the following compounds?



 [View Text Solution](#)

3. Write the state of hybridisation of carbon in the following compounds and shapes of each of the molecules

(a) $H_2C = O$ (b) CH_3F (c) $HC \equiv N$

 [View Text Solution](#)

4. What are hybridisation states of each carbon atom in the following compounds?

(i) $CH_2 = C = O$ (ii) $CH_3CH = CH_2$ (iii) $(CH_3)_2CO$ (iv) $CH_2 = CHCN$ (v)
 C_6H_6

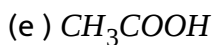
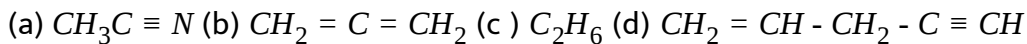
 [View Text Solution](#)

5. Indicate the σ and π bonds in the following molecules:

(i) C_6H_6 (ii) C_6H_{12} (iii) CH_2Cl_2 (iv) $CH_2 = C = CH_2$ (v) CH_3NO_2 (vi)
 $HCONHCH_3$

 [View Text Solution](#)

6. How many σ and π bonds in the following examples?

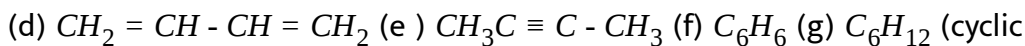
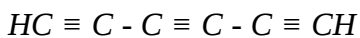
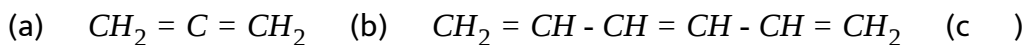


 [View Text Solution](#)

7. What is the hybridisation of carbon in problem

 [View Text Solution](#)

8. Which hybridisation of carbon is same in the following? Give type of hybridisation



 [View Text Solution](#)

9. In which of the following has only one π bond?

(a) CH_3COCH_3 (b) CH_3CHO (c) CH_3CONH_2 (d) C_2H_2 (e) C_2H_4 (f) $CH_3CH = CH_2$ (g) $CH_3 - CH = CHCN$ (h) CH_3COOH (i) C_6H_5COOH



[View Text Solution](#)

10. Write 3-methyl octane in various formula



[View Text Solution](#)

11. Write 2-bromobutane in various form



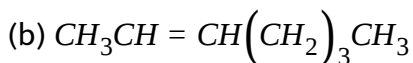
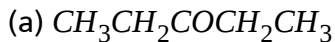
[View Text Solution](#)

12. Write condensed and line structure of cyclo-propane, cyclopentane and chlorocyclohexane.



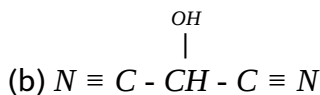
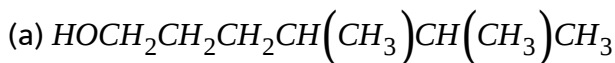
[View Text Solution](#)

13. Expand each of the following condensed formulas into their complete structural formulas.



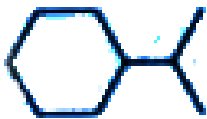
 [View Text Solution](#)

14. For each of the following compounds, write a condensed formula and also their bond-line formula.



 [View Text Solution](#)

15. Expand each of the following bondline formulas to show all the atoms including carbon and hydrogen



 [View Text Solution](#)

16. Give condensed and bond line structural formulas and identify the functional group (s) present, If any, for:

(a) 2, 2, 4-Trimethylpentane

(b) 2-Hydroxy-1, 2, 3-propanetricarboxylic acid

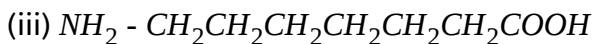
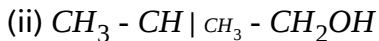
(c) Hexanedial

 [View Text Solution](#)

17. Write bond line formulas for: Isopropyl alcohol, 2, 3-Dimethylbutanal, Heptan-4-one

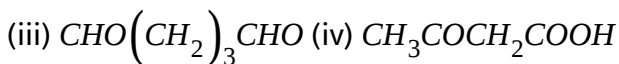
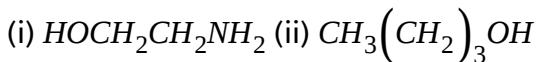
 [View Text Solution](#)

18. Give line and condensed formula of following



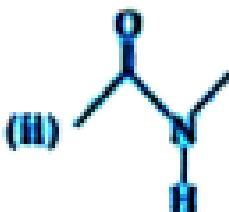
View Text Solution

19. Write complete structural formula of following condensed formula with C and H



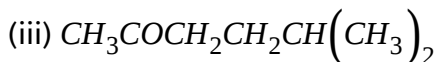
View Text Solution

20. Write complete structural formula containing C and H of following line formula



[View Text Solution](#)

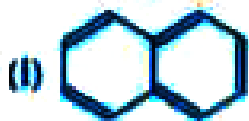
21. Write line formula and dash formula of following condensed formula.





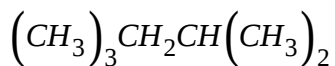
[View Text Solution](#)

22. Write complete structure including C, H,... atom of the following



[View Text Solution](#)

23. Give (i) structural formula (ii) dash formula and IUPAC name of





[View Text Solution](#)

24. Write dash formula and complete structural formula of 2, 4-dimethylpentane and then decide IUPAC name



[View Text Solution](#)

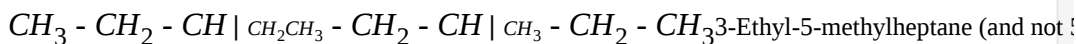
25. Structures and IUPAC names of some hydrocarbons are given below.

Explain why the names given in the parentheses are incorrect.

(a)

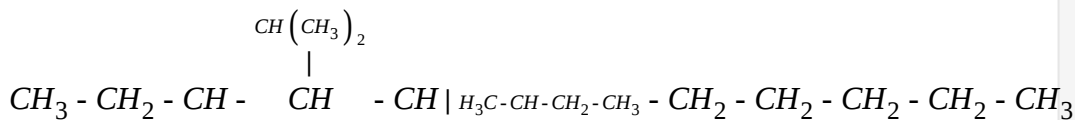


(b)



[View Text Solution](#)

26.

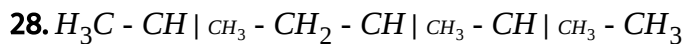


Which IUPAC name is write from these name 5-sec-Butyl-4-isopropyldecane and 4-isopropyl-5-(1-methylpropyl) Decane?

 [View Text Solution](#)

27. In above problem -26, why the IUPAC name 4-isopropyl-5-secondary butyldecane is wrong?

 [View Text Solution](#)

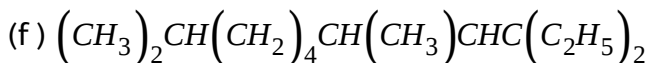
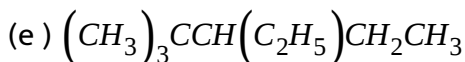
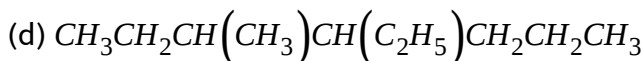
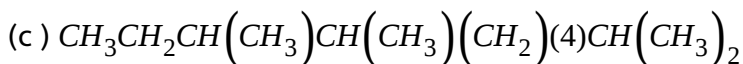
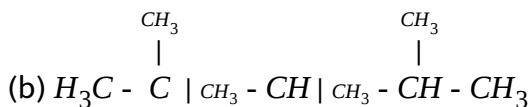
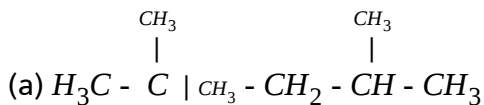


(i) 2, 3, 5- Trimethyl hexane and

(ii) 2, 4, 5-Trimethyl hexane which name is correct ? Why?

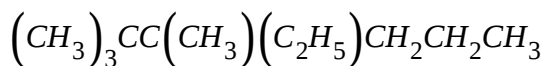
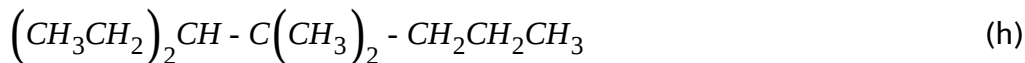
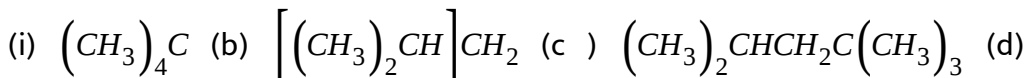
 [View Text Solution](#)

29. Give the correct order of substitute group in the following



View Text Solution

30. Write IUPAC name of following:

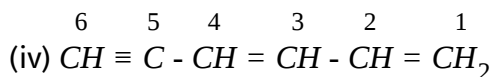
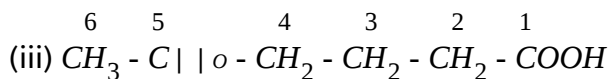
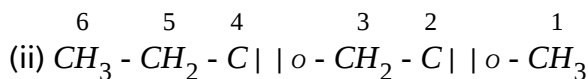
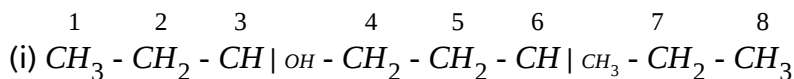


View Text Solution

31. Write IUPAC name and write condensed structure, dash structure line formula of problem

 View Text Solution

32. Write the IUPAC names of the compounds i-iv from their given structures:



 View Text Solution

33. Derive the structure of

(i) 2-Chlorohexane (ii) Pent -4-en-2-ol (iii) 3-Nitrocyclohexene (iv) Cyclohex-

2-en-1-ol (v) 6-Hydroxyheptanal

 [View Text Solution](#)

34. Which of the following represents the correct IUPAC name for the compounds concerned?

- (a) 2, 2-Dimethylpentane OR 2-Dimethylpentane
- (b) 2, 4, 7-Trimethyloctane OR 2, 5,7-Trimethyloctane
- (c) 2-Chloro-4-methylpentane OR 4-Chloro-2-methylpentane
- (d) But 3-yn-1-ol OR But -4-ol-1-yne

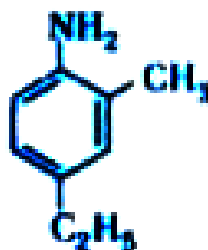
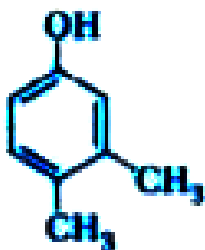
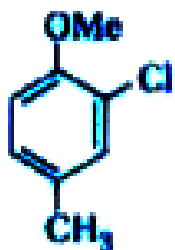
 [View Text Solution](#)

35. Give IUPAC name of following

- (i) CH_3COOCH_3 (ii) $CH_3COOCH_2CH_3$ (iii) $CH_3CH_2COOCH_3$ (iv) $HCOOCH_3$

 [View Text Solution](#)

36. Derive IUPAC name of following:



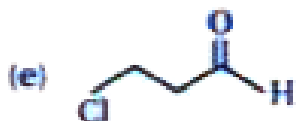
[View Text Solution](#)

37. Write the structural formula of:

- (a) o-ethylanisole (b) p-nitroaniline (c) 2, 3-dibromo-1-phenylpentane (d)
4-ethyl-1-fluoro-2-nitrobenzene

[View Text Solution](#)

38. Give the IUPAC names of the following compounds:



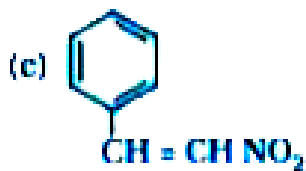
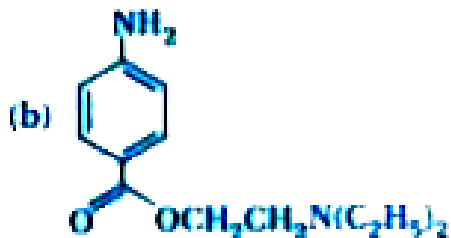
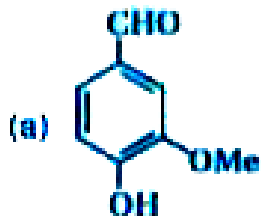
 [View Text Solution](#)

39. Draw formulas for the first five members of each homologous series beginning with the following compounds.

(a) HCOOH (b) CH_3COCH_3 (c) $\text{H}-\text{CH}=\text{CH}_2$

 [View Text Solution](#)

40. Identify the functional groups in the following compounds:



 [View Text Solution](#)

41. Give structure and name of one double bond containing cyclic compound

 [View Text Solution](#)

42. Which of the main functional group in the following ?

(a) $CH_2OH - CH_2 - CHF - CH_2COOH$ (b) $(CH_3)_2CHCOCOOH$ (c)

$CH_3CH_2C|_{NH_2}HOH$ (d) $CH_3COCH_2CH_2OH$ (e) $CH_2CH(NH_2)COOH$ (f)

$CHOCH_2COCH_2CH_3$

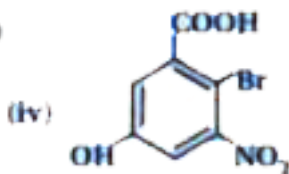
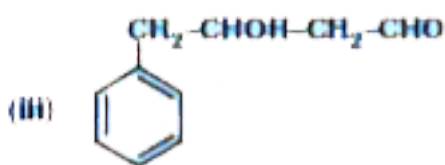
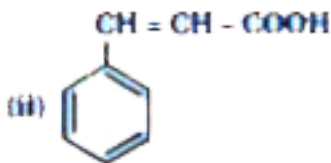
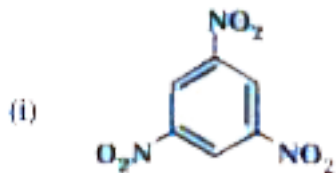
 [View Text Solution](#)

43. Give name of following



 [View Text Solution](#)

44. Write IUPAC name of following



[View Text Solution](#)

45. Give structure of following

(i) Cyclohexane-1, 2-diol (ii) Vinylalcohol (iii) 2-bromo-4-methylaniline (iv) 3-hydroxy-1, 3-5-pentantrioicacid OR 3-hydroxy-1, 2, 3-propentricarboxylicacid

[View Text Solution](#)

46. Using curved-arrow notation, show the formation of reactive intermediates when the following covalent bonds undergo heterolytic

cleavage.

(a) $CH_3 - SCH_3$, (b) $CH_3 - CH$, (c) $CH_3 - Cu$

 [View Text Solution](#)

47. Giving justification categories the following molecules/ions as nucleophile or electrophile: HS^- , BF_3 , $C_2H_5O^-$, $(CH_3)_3N$,

C^+ , $CH_3C^+ = O$, H_2N^+ , NO_2^+

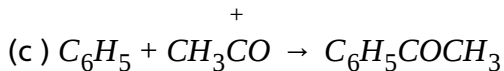
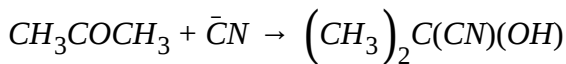
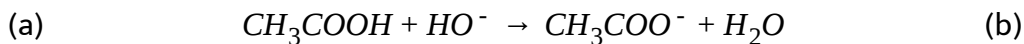
 [View Text Solution](#)

48. Identify electrophilic centre in the following:

$CH_3CH = O$, CH_3CN , CH_3I

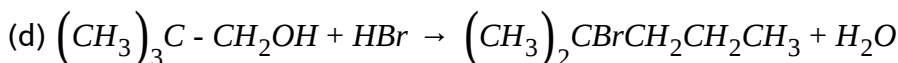
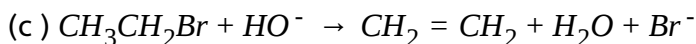
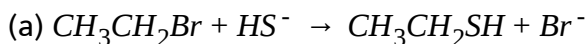
 [View Text Solution](#)

49. Identify the reagents shown in bold in the following equations as nucleophiles or electrophiles:



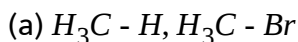
 [View Text Solution](#)

50. Classify the following reactions in one of the reaction type studied in this unit.



 [View Text Solution](#)

51. Which bond is more polar in the following pairs of molecules



(b) $H_3C - NH_2, H_3C - OH$

(c) $H_3C - OH, H_3C - SH$

 [View Text Solution](#)

52. In which C-C bond of $CH_3CH_2CH_2Br$, the inductive effect is expected to be the least?

 [View Text Solution](#)

53. Which of the following have maximum strongly of attractive inductive effects?

(a) $CH_3CH_2Cl, CH_3CH_2Br, CH_3CH_2F, CH_3F$

(b) $CH_3COOH, CH_2ClCOOH, CHCl_2COOH$

(c) $(CH_3)_3CCOOH, (CH_3)_2CHCOOH, CH_3COOH$

 [View Text Solution](#)

54. Represent the inductive effect in: (a) CH_3COOH , (b) CCl_3COOH and (c) CH_3COOH

 [View Text Solution](#)

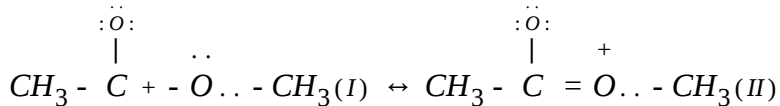
55. Write resonance structures of CH_3COO^- and show the movement of electrons by curved arrows

 [View Text Solution](#)

56. Write resonance structures of $CH_2 = CH - CHO$. Indicate relative stability of the contributing structures

 [View Text Solution](#)

57. Explain why the following two structures, I and II cannot be the major contributors to the real structure of CH_3COOCH_3 .

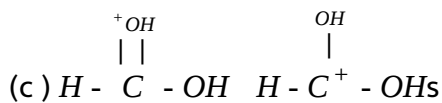
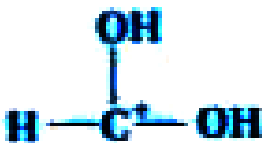
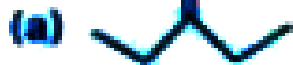


 [View Text Solution](#)

58. Which of the two $:\text{O}_2\text{NCH}_2\text{CH}_2\text{O}^-$ or $\text{CH}_3\text{CH}_2\text{O}^-$ is expected to be more stable and why?

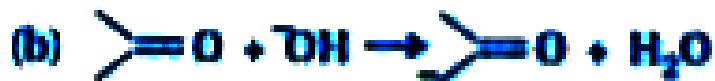
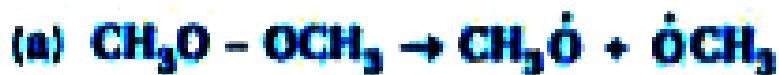
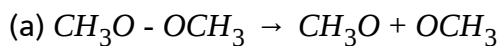
 [View Text Solution](#)

59. What is the relationship between the members of following pairs of structure ? Are they structural or geometrical isomers or resonance contributors?



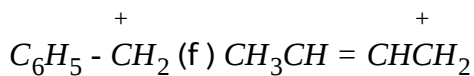
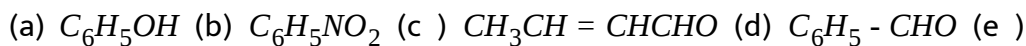
[View Text Solution](#)

60. For the following bond cleavages, use curved arrows to show the electron flow and classify each as homolysis or heterolysis. Identify reactive intermediate produced as free radical, carbocation and carbanion



[View Text Solution](#)

61. Draw the resonance structures for the following compounds. Show the electron shift using curved-arrow notation.



[View Text Solution](#)

62. The resonance effect of groups is electron removing (+R) or electron attracting (-R)?

 [View Text Solution](#)

63. Explain the terms inductive and Electromeric effects. Which electron displacement effect explains the following correct orders of acidity of the carboxylic acids?

(a) $Cl_3CCOOH > Cl_2CHCOOH > ClCH_2COOH$ (b)

$CH_3CH_2COOH > (CH_3)_2CHCOOH > (CH_3)_3C.COOH$

 [View Text Solution](#)

64. Explain why $(C^+H_3)_3$ is more stable than CH_3CH_2 and CH_3 is the least stable cation

 [View Text Solution](#)

65. On complete combustion, 0.246g of an organic compound gave 0.198g of carbon dioxide and 0.1014g of water, Determine the percentage composition of carbon and hydrogen in the compound.

 [View Text Solution](#)

66. An organic compound contains 69% carbon and 4.8% hydrogen, the remainder being oxygen. Calculate the masses of carbon dioxide and water produced when 0.20g of this substance is subjected to complete combustion

 [View Text Solution](#)

67. In Dumas' method for estimation of nitrogen, 0.3g of an organic compound gave 50mL of nitrogen collected at 300K temperature and 715 mm pressure. Calculate the percentage composition of nitrogen in the compound. (Aqueous tension at 300K = 15mm)

 [View Text Solution](#)

68. During estimation of nitrogen present in an organic compound by Kjeldahl's method, the ammonia evolved from 0.5g of the compound in Kjeldahl's estimation of nitrogen, neutralized 10 mL of $1M H_2SO_4$. Find out the percentage of nitrogen in the compound

 [View Text Solution](#)

69. A sample of 0.50g of an organic compound was treated according to Kjeldahl's method. The ammonia evolved was absorbed in 50ml of $0.5M H_2SO_4$. The residual acid required 60mL of 0.5M solution of NaOH for neutralisation. Find the percentage composition of nitrogen in the compound

 [View Text Solution](#)

70. In Carius method of estimation of halogen, 0.15 g of an organic compound gave 0.12g of AgBr. Find out the percentage of bromine in the compound (Ag = 108, Br= 80)

 [View Text Solution](#)

71. 0.3780g of an organic chloro compound gave 0.5740g of silver chloride in Carius estimation. Calculate the percentage of chlorine present in the compound (Ag= 108, Cl= 35.5)

 [View Text Solution](#)

72. In sulphur estimation, 0.157 g of an organic compound gave 0.4813 g of barium sulphate. What is the percentage of sulphur in the compound ? (Ba = 136, S= 32, O= 16)

 [View Text Solution](#)

73. In carious method 0.12g AgBr obtained from 0.15g organic compound.

Find out the percentage of AgBr in compound. (Ag= 108, Br =80)

 [View Text Solution](#)

74. In the estimation of sulphur by Carius method, 0.468g of an organic sulphur compound afforded 0.668g of barium sulphate. Find out the percentage of sulphur in the given compound.

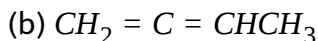
(Ba= 137, S=32, O=16)

 [View Text Solution](#)

75. 0.12g organic compound gave 0.22g $Mg_2P_2O_7$. What is the percentage of phosphorus in compound? (P= 31) (Molar mass of $Mg_2P_2O_7 = 222g$)

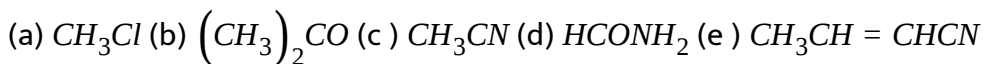
 [View Text Solution](#)

76. How many σ and π bonds are present in each of the following molecules?



 [View Text Solution](#)

77. What is the type of hybridisation of each carbon in the following compounds?



 [View Text Solution](#)

78. Write the state of hybridisation of carbon in the following compounds and shapes of each of the molecules



 [View Text Solution](#)

79. What are hybridisation states of each carbon atom in the following compounds?

(i) $CH_2 = C = O$ (ii) $CH_3CH = CH_2$ (iii) $(CH_3)_2CO$ (iv) $CH_2 = CHCN$ (v)

C_6H_6

 [View Text Solution](#)

80. Indicate the σ and π bonds in the following molecules:

(i) C_6H_6 (ii) C_6H_{12} (iii) CH_2Cl_2 (iv) $CH_2 = C = CH_2$ (v) CH_3NO_2 (vi)

$HCONHCH_3$

 [View Text Solution](#)

81. How many σ and π bonds in the following examples?

(a) $CH_3C \equiv N$ (b) $CH_2 = C = CH_2$ (c) C_2H_6 (d) $CH_2 = CH - CH_2 - C \equiv CH$

(e) CH_3COOH

 [View Text Solution](#)

82. What is the hybridisation of carbon in problem

 [View Text Solution](#)

83. Which hybridisation of carbon is same in the following? Give type of hybridisation

(a) $CH_2 = C = CH_2$ (b) $CH_2 = CH - CH = CH - CH = CH_2$ (c)

$HC \equiv C - C \equiv C - C \equiv CH$

(d) $CH_2 = CH - CH = CH_2$ (e) $CH_3C \equiv C - CH_3$ (f) C_6H_6 (g) C_6H_{12} (cyclic comp) (h) $CH_3 - CH = CH - CH = CH_3$

 [View Text Solution](#)

84. In which of the following has only one π bond?

(a) CH_3COCH_3 (b) CH_3CHO (c) CH_3CONH_2 (d) C_2H_2 (e) C_2H_4 (f)

$CH_3CH = CH_2$ (g) $CH_3 - CH = CHCN$ (h) CH_3COOH (i) C_6H_5COOH

 [View Text Solution](#)

85. Write 3-methyl octane in various formula

 [View Text Solution](#)

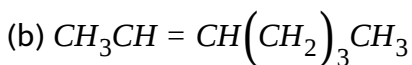
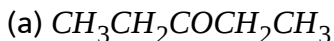
86. Write 2-bromobutane in various form

 [View Text Solution](#)

87. Write condensed and line structure of cyclo-propane, cyclopentane and chlorocyclohexane.

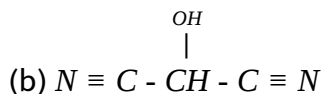
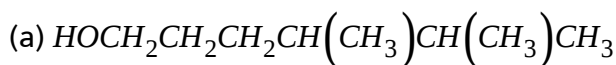
 [View Text Solution](#)

88. Expand each of the following condensed formulas into their complete structural formulas.



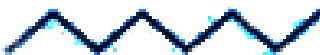
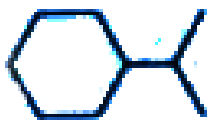
 [View Text Solution](#)

89. For each of the following compounds, write a condensed formula and also their bond-line formula.



 [View Text Solution](#)

90. Expand each of the following bondline formulas to show all the atoms including carbon and hydrogen



 [View Text Solution](#)

91. Give condensed and bond line structural formulas and identify the functional group (s) present, If any, for:

(a) 2, 2, 4-Trimethylpentane

(b) 2-Hydroxy-1, 2, 3-propanetricarboxylic acid

(c) Hexanedial



[View Text Solution](#)

92. Write bond line formulas for: Isopropyl alcohol, 2, 3-Dimethylbutanal, Heptan-4-one



[View Text Solution](#)

93. Give line and condensed formula of following

(i) $CH_3CH_2CH_2CH_2CH_2CH_2CHBrCH_2CHO$

(ii) $CH_3 - CH |_{CH_3} - CH_2OH$

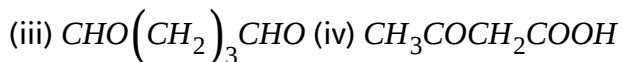
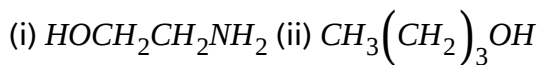
(iii) $NH_2 - CH_2CH_2CH_2CH_2CH_2COOH$

(iv) $CH_3CH_2CH_2OH$



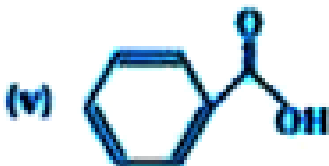
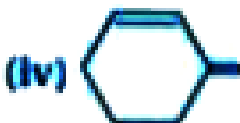
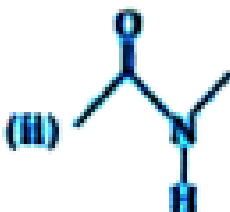
[View Text Solution](#)

94. Write complete structural formula of following condensed formula with C and H



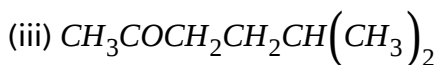
[View Text Solution](#)

95. Write complete structural formula containing C and H of following line formula



[View Text Solution](#)

96. Write line formula and dash formula of following condensed formula.



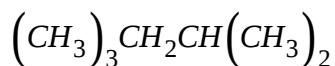
[View Text Solution](#)

97. Write complete structure including C, H,... atom of the following



[View Text Solution](#)

98. Give (i) structural formula (ii) dash formula and IUPAC name of



[View Text Solution](#)

99. Write dash formula and complete structural formula of 2, 4-dimethylpentane and then decide IUPAC name

 [View Text Solution](#)

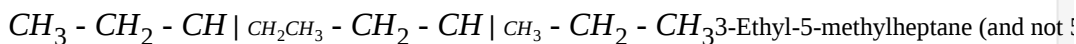
100. Structures and IUPAC names of some hydrocarbons are given below.

Explain why the names given in the parentheses are incorrect.

(a)

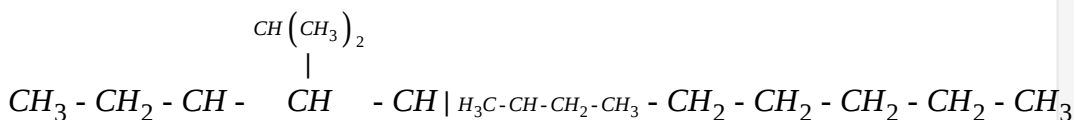


(b)



 [View Text Solution](#)

101.



Which IUPAC name is write from these name 5-sec-Butyl-4-isopropyldecane and 4-isopropyl-5-(1-methylpropyl) Decane?

 [View Text Solution](#)

102. In above problem -26, why the IUPAC name 4-isopropyl-5-secondary butyldecane is wrong?

 [View Text Solution](#)

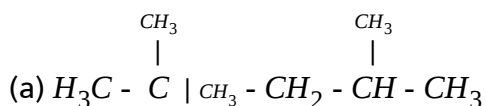
103. $H_3C - CH |_{CH_3} - CH_2 - CH |_{CH_3} - CH |_{CH_3} - CH_3$

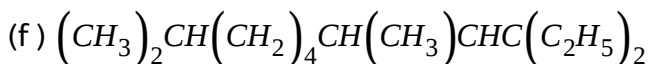
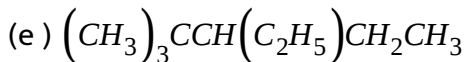
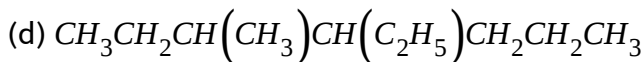
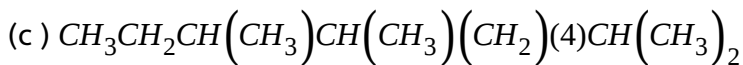
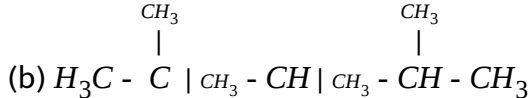
(i) 2, 3, 5- Trimethyl hexane and

(ii) 2, 4, 5-Trimethyl hexane which name is correct ? Why?

 [View Text Solution](#)

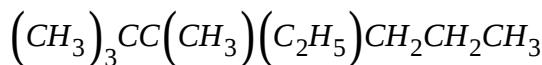
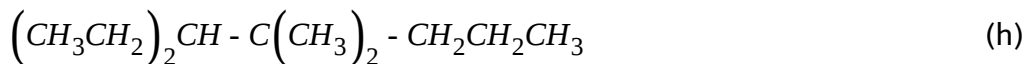
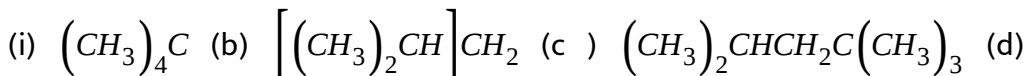
104. Give the correct order of substitute group in the following





[View Text Solution](#)

105. Write IUPAC name of following:

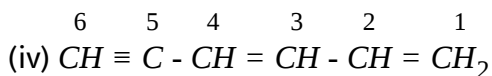
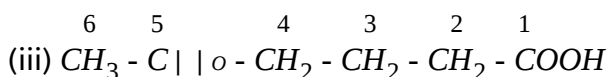
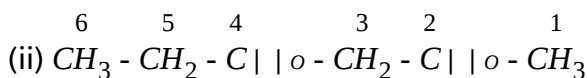
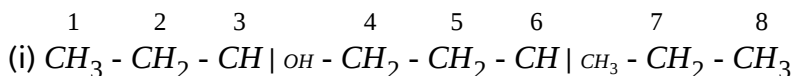


[View Text Solution](#)

106. Write IUPAC name and write condensed structure, dash structure line formula of problem

 [View Text Solution](#)

107. Write the IUPAC names of the compounds i-iv from their given structures:



 [View Text Solution](#)

108. Derive the structure of

(i) 2-Chlorohexane (ii) Pent -4-en-2-ol (iii) 3-Nitrocyclohexene (iv) Cyclohex-2-en-1-ol (v) 6-Hydroxyheptanal

 [View Text Solution](#)

109. Which of the following represents the correct IUPAC name for the compounds concerned?

- (a) 2, 2-Dimethylpentane OR 2-Dimethylpentane
- (b) 2, 4, 7-Trimethyloctane OR 2, 5,7-Trimethyloctane
- (c) 2-Chloro-4-methylpentane OR 4-Chloro-2-methylpentane
- (d) But 3-yn-1-ol OR But -4-ol-1-yne

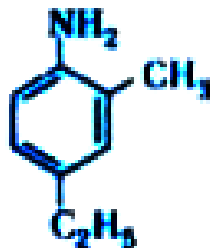
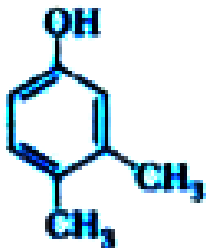
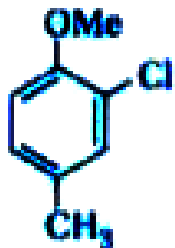
 [View Text Solution](#)

110. Give IUPAC name of following

- (i) CH_3COOCH_3 (ii) $CH_3COOCH_2CH_3$ (iii) $CH_3CH_2COOCH_3$ (iv) $HCOOCH_3$

 [View Text Solution](#)

111. Derive IUPAC name of following:



[View Text Solution](#)

112. Write the structural formula of:

- (a) o-ethylanisole (b) p-nitroaniline (c) 2, 3-dibromo-1-phenylpentane (d) 4-ethyl-1-fluoro-2-nitrobenzene

[View Text Solution](#)

113. Give the IUPAC names of the following compounds:



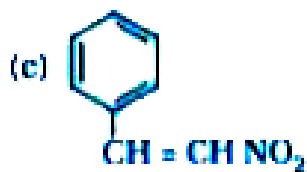
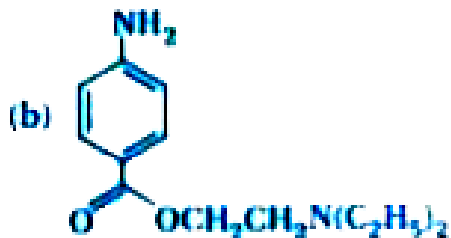
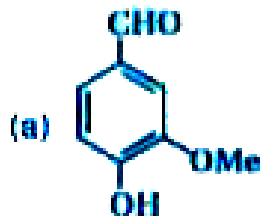
 [View Text Solution](#)

114. Draw formulas for the first five members of each homologous series beginning with the following compounds.

(a) HCOOH (b) CH_3COCH_3 (c) $\text{H}-\text{CH}=\text{CH}_2$

 [View Text Solution](#)

115. Identify the functional groups in the following compounds:



[View Text Solution](#)

116. Give structure and name of one double bond containing cyclic compound

[View Text Solution](#)

117. Which of the main functional group in the following ?

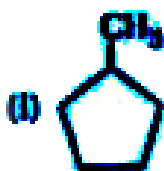
(a) $CH_2OH - CH_2 - CHF - CH_2COOH$ (b) $(CH_3)_2CHCOCOOH$ (c)

$CH_3CH_2C|NH_2HOH$ (d) $CH_3COCH_2CH_2OH$ (e) $CH_2CH(NH_2)COOH$ (f)

$CHOCH_2COCH_2CH_3$

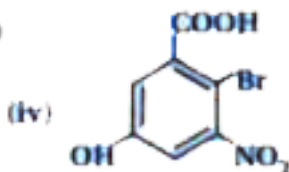
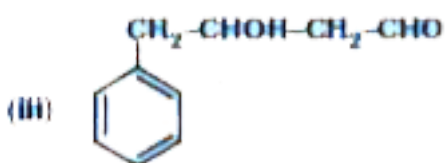
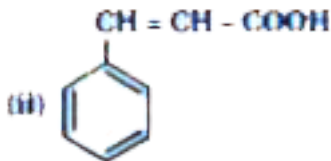
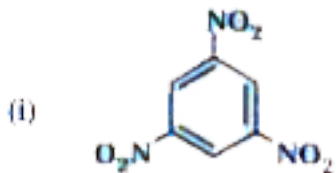
 [View Text Solution](#)

118. Give name of following



 [View Text Solution](#)

119. Write IUPAC name of following



 [View Text Solution](#)

120. Give structure of following

(i) Cyclohexane-1, 2-diol (ii) Vinylalcohol (iii) 2-bromo-4-methylaniline (iv) 3-hydroxy-1, 3-5-pentantrioicacid OR 3-hydroxy-1, 2, 3-propentricarboxylicacid

 [View Text Solution](#)

121. Using curved-arrow notation, show the formation of reactive intermediates when the following covalent bonds undergo heterolytic

cleavage.

(a) $CH_3 - SCH_3$, (b) $CH_3 - CH$, (c) $CH_3 - Cu$

 [View Text Solution](#)

122. Giving justification categories the following molecules/ions as nucleophile or electrophile: HS^- , BF_3 , $C_2H_5O^-$, $(CH_3)_3N$,

C^+ , $CH_3C^+ = O$, H_2N^+ , NO_2^+

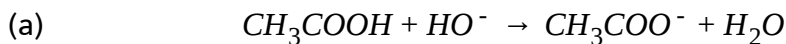
 [View Text Solution](#)

123. Identify electrophilic centre in the following:

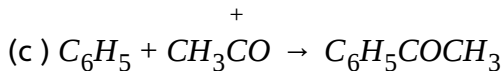
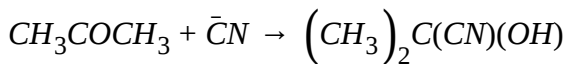
$CH_3CH = O$, CH_3CN , CH_3I

 [View Text Solution](#)

124. Identify the reagents shown in bold in the following equations as nucleophiles or electrophiles:

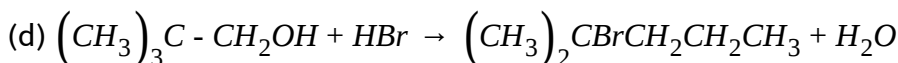
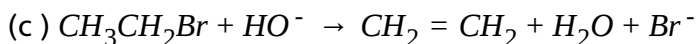
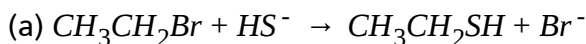


(b)



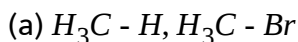
 [View Text Solution](#)

125. Classify the following reactions in one of the reaction type studied in this unit.



 [View Text Solution](#)

126. Which bond is more polar in the following pairs of molecules



(b) $H_3C - NH_2, H_3C - OH$

(c) $H_3C - OH, H_3C - SH$

 [View Text Solution](#)

127. In which C-C bond of $CH_3CH_2CH_2Br$, the inductive effect is expected to be the least?

 [View Text Solution](#)

128. Which of the following have maximum strongly of attractive inductive effects?

(a) $CH_3CH_2Cl, CH_3CH_2Br, CH_3CH_2F, CH_3F$

(b) $CH_3COOH, CH_2ClCOOH, CHCl_2COOH$

(c) $(CH_3)_3CCOOH, (CH_3)_2CHCOOH, CH_3COOH$

 [View Text Solution](#)

129. Represent the inductive effect in: (a) CH_3COOH , (b) CCl_3COOH and (c) CH_3COOH

 [View Text Solution](#)

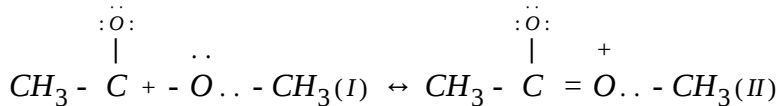
130. Write resonance structures of CH_3COO^- and show the movement of electrons by curved arrows

 [View Text Solution](#)

131. Write resonance structures of $CH_2 = CH - CHO$. Indicate relative stability of the contributing structures

 [View Text Solution](#)

132. Explain why the following two structures, I and II cannot be the major contributors to the real structure of CH_3COOCH_3 .

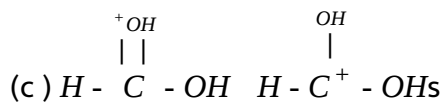
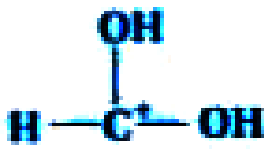


 [View Text Solution](#)

133. Which of the two $\text{:O}_2\text{NCH}_2\text{CH}_2\text{O}^-$ or $\text{CH}_3\text{CH}_2\text{O}^-$ is expected to be more stable and why?

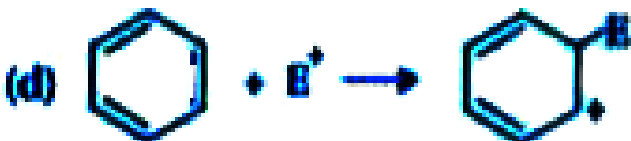
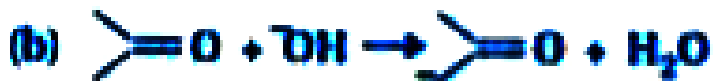
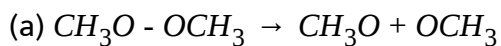
 [View Text Solution](#)

134. What is the relationship between the members of following pairs of structure ? Are they structural or geometrical isomers or resonance contributors?



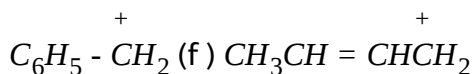
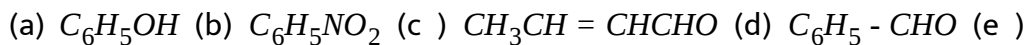
View Text Solution

135. For the following bond cleavages, use curved arrows to show the electron flow and classify each as homolysis or heterolysis. Identify reactive intermediate produced as free radical, carbocation and carbanion



[View Text Solution](#)

136. Draw the resonance structures for the following compounds. Show the electron shift using curved-arrow notation.



[View Text Solution](#)

137. The resonance effect of groups is electron removing (+R) or electron attracting (-R)?

 [View Text Solution](#)

138. Explain the terms inductive and Electromeric effects. Which electron displacement effect explains the following correct orders of acidity of the carboxylic acids?

(a) $Cl_3CCOOH > Cl_2CHCOOH > ClCH_2COOH$ (b)

$CH_3CH_2COOH > (CH_3)_2CHCOOH > (CH_3)_3C.COOH$

 [View Text Solution](#)

139. Explain why $(C^+H_3)_3$ is more stable than CH_3CH_2 and CH_3 is the least stable cation

 [View Text Solution](#)

140. On complete combustion, 0.246g of an organic compound gave 0.198g of carbon dioxide and 0.1014g of water, Determine the percentage composition of carbon and hydrogen in the compound.

 [View Text Solution](#)

141. An organic compound contains 69% carbon and 4.8% hydrogen, the remainder being oxygen. Calculate the masses of carbon dioxide and water produced when 0.20g of this substance is subjected to complete combustion

 [View Text Solution](#)

142. In Dumas' method for estimation of nitrogen, 0.3g of an organic compound gave 50mL of nitrogen collected at 300K temperature and 715 mm pressure. Calculate the percentage composition of nitrogen in the compound. (Aqueous tension at 300K = 15mm)

 [View Text Solution](#)

143. During estimation of nitrogen present in an organic compound by Kjeldahl's method, the ammonia evolved from 0.5g of the compound in Kjeldahl's estimation of nitrogen, neutralized 10 mL of $1M H_2SO_4$. Find out the percentage of nitrogen in the compound

 [View Text Solution](#)

144. A sample of 0.50g of an organic compound was treated according to Kjeldahl's method. The ammonia evolved was absorbed in 50ml of $0.5M H_2SO_4$. The residual acid required 60mL of 0.5M solution of NaOH for neutralisation. Find the percentage composition of nitrogen in the compound

 [View Text Solution](#)

145. In Carius method of estimation of halogen, 0.15 g of an organic compound gave 0.12g of AgBr. Find out the percentage of bromine in the compound (Ag = 108, Br= 80)

 [View Text Solution](#)

146. 0.3780g of an organic chloro compound gave 0.5740g of silver chloride in Carius estimation. Calculate the percentage of chlorine present in the compound (Ag= 108, Cl= 35.5)

 [View Text Solution](#)

147. In sulphur estimation, 0.157 g of an organic compound gave 0.4813 g of barium sulphate. What is the percentage of sulphur in the compound ? (Ba = 136, S= 32, O= 16)

 [View Text Solution](#)

148. In carious method 0.12g AgBr obtained from 0.15g organic compound.

Find out the percentage of AgBr in compound. (Ag= 108, Br =80)

 [View Text Solution](#)

149. In the estimation of sulphur by Carius method, 0.468g of an organic sulphur compound afforded 0.668g of barium sulphate. Find out the percentage of sulphur in the given compound.

(Ba= 137, S=32, O=16)

 [View Text Solution](#)

150. 0.12g organic compound gave 0.22g $Mg_2P_2O_7$. What is the percentage of phosphorus in compound? (P= 31) (Molar mass of

$Mg_2P_2O_7 = 222g$)

 [View Text Solution](#)

Section A -Try Your Self-3

1. $38\text{cm}^2\text{N}_2$ gas at 300K temperature and 96pa pressure. In 0.25g organic compound calculate the % of nitrogen. (1 atm .- 101.3 pa)



[View Text Solution](#)

2. In Dumas method of estimation of nitrogen 3.88gm compound at 293K temperature and 746mm pressure 1.31 mL N_2 gas. Calculate percentage of nitrogen. (Aqueor tension 6mm)



[View Text Solution](#)

3. In Kjeldahl's method, estimation of nitrogen, from 3.88 milligram compound produce ammonia require 5.73 mL 0.011N HCl. Calculate % of N.



[View Text Solution](#)

4. 6.46gm $BaSO_4$ is obtain from 4.81gm compound in estimation of sulphur by Carius method. Calculat ethe % of sulphur

 [View Text Solution](#)

5. Calculate the % of following elements

(a) Sulphur in CN_4H_4S (b) Carbon in $C_2H_4O_2$

(c) Nitrogen in CN_2H_4O (d) Hydrogen C_6H_6

 [View Text Solution](#)

6. 0.25g compound give 0.350g, $BaSO_4$. What is the percentage of sulphur?

 [View Text Solution](#)

7. 0.45g organic compound by combustion, give 0.792g CO_2 and 0.324g water. For this compound ammonia obtain from 0.24g compound in Kjeldahl's method absorb in 50 ml, 0.25N, H_2SO_4 . In neutralisation 77.0 mL, 0.25N is used. Determine the empirical formula of compound NaOH

 [View Text Solution](#)

8. The ammonia obtain from 0.50g organic compound is absorb in 50mL 0.5M, H_2SO_4 . In titration of excess H_2SO_4 , 60mL, 0.5M NaOH is used. Calculate the % of nitrogen

 [View Text Solution](#)

9. By combustion of 0.2475 gm organic compound 0.4950 gm, CO_2 and 6.2025 gm, H_2O obtain, calculate the % of C, H, O

 [View Text Solution](#)

10. In Kjeldahl method of 0.35g of organic compound the produce ammonia absorb in 100ml, 0.1 M, H_2SO_4 . Then 154mL, 0.1M, NaOH is used in titration of excess H_2SO_4 . Calculate the % of nitrogen

 [View Text Solution](#)

11. $38cm^2N_2$ gas at 300K temperature and 96pa pressure. In 0.25g organic compound calculate the % of nitrogen. (1 atm . - 101.3 pa)

 [View Text Solution](#)

12. In Dumas method of estimation of nitrogen 3.88gm compound at 293K temperature and 746mm pressure 1.31 mL N_2 gas. Calculate percentage of nitrogen. (Aqueor tension 6mm)

 [View Text Solution](#)

13. In Kjeldahl's method, estimation of nitrogen, from 3.88 milligram compound produce ammonia require 5.73 mL 0.011N HCl. Calculate % of N.

 [View Text Solution](#)

14. 6.46gm $BaSO_4$ is obtain from 4.81gm compound in estimation of sulphur by Carius method. Calculat ethe % of sulphur

 [View Text Solution](#)

15. Calculate the % of following elements

(a) Sulphur in CN_4H_4S (b) Carbon in $C_2H_4O_2$

(c) Nitrogen in CN_2H_4O (d) Hydrogen C_6H_6

 [View Text Solution](#)

16. 0.25g compound give 0.350g, $BaSO_4$. What is the percentage of sulphur?

 [View Text Solution](#)

17. 0.45g organic compound by combustion, give 0.792g CO_2 and 0.324g water. For this compound ammonia obtain from 0.24g compound in Kjeldahl's method absorb in 50 ml, 0.25N, H_2SO_4 . In neutralisation 77.0 mL, 0.25N is used. Determine the empirical formula of compound NaOH

 [View Text Solution](#)

18. The ammonia obtain from 0.50g organic compound is absorb in 50mL 0.5M, H_2SO_4 . In titration of excess H_2SO_4 , 60mL, 0.5M NaOH is used. Calculate the % of nitrogen

 [View Text Solution](#)

19. By combustion of 0.2475 gm organic compound 0.4950 gm, CO_2 and 6.2025 gm, H_2O obtain, calculate the % of C, H, O

 [View Text Solution](#)

20. In Kjeldahl method of 0.35g of organic compound the produce ammonia absorb in 100ml, 0.1 M, H_2SO_4 . Then 154mL, 0.1M, NaOH is used in titration of excess H_2SO_4 . Calculate the % of nitrogen

 [View Text Solution](#)

Section-B (Short Questions)

1. What is catenation?

 [View Text Solution](#)

2. What is organic chemistry?



[View Text Solution](#)

3. How the modern shape develop in organic chemistry?



[View Text Solution](#)

4. In organic compound, what is the effect of hybridisation of carbon on bond length and bond enthalpy?



[View Text Solution](#)

5. What is the proportion of s-character in sp^3 , sp^2 and sp hybrid orbitals?
What is the order of electronegativity in it?



[View Text Solution](#)

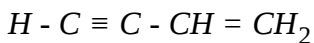
6. The shape of molecule is depend on which factor?

[View Text Solution](#)

7. What is the type of hybridisation of carbon atom in the following ?

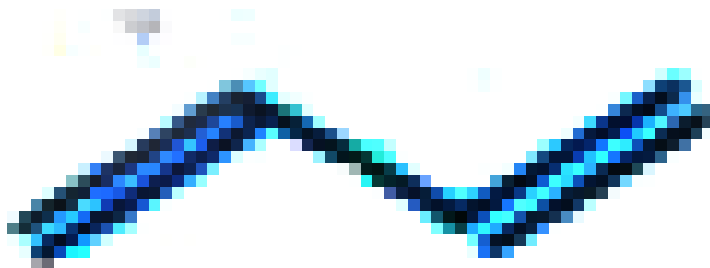
(a) What is hybridisation of carbon $N \equiv C - CH = CH_2$

(b) The carbon of single bond C-C in



(c) $H - C \equiv C - C = CH$

(d) $H_2C = C = C = CH_2$



[View Text Solution](#)

8. How many σ and π bonds are present in the following

(a) But-1-ene-3-yne (b) Buta-1,3-diene (c) $CH_2 = CH - C \equiv N$ (d) Propan-1,

2,3-diene (e) 1-butene and 2-butane

[View Text Solution](#)



[View Text Solution](#)

9. Classify the following compounds in Acyclic, Alicyclic, Benzenoid and non-benzenoid: Tropolone, Propane, Benzene, Butene, ethane, acetic acid, tetrahydrofuran, cyclohexene, Nepthalene, cyclobutane



[View Text Solution](#)

10. Give the method of three-dimensional representation of organic molecule



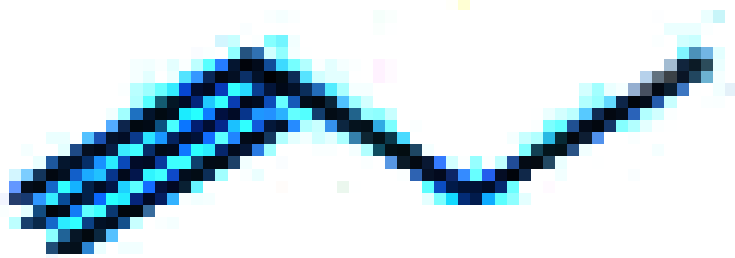
[View Text Solution](#)

11. What indicate by corner and end in the bond line structure method of organic compound?



[View Text Solution](#)

12. Give number of H atom attach with terminate carbon in



[View Text Solution](#)

13. What is the limitation of framework model?

[View Text Solution](#)

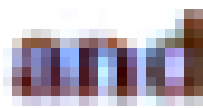
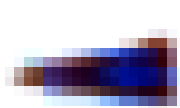
14. What is used to represent the C=C in ball and stick model?

[View Text Solution](#)

15. Draw figure of framework model, ball and stick model and space filling model of methane.

 [View Text Solution](#)

16. What indicate these



is solid dash

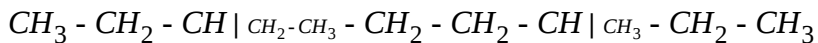
model of organic molecule?

 [View Text Solution](#)

17. In 3D representation of organic molecule, which model is indicate atomic size?

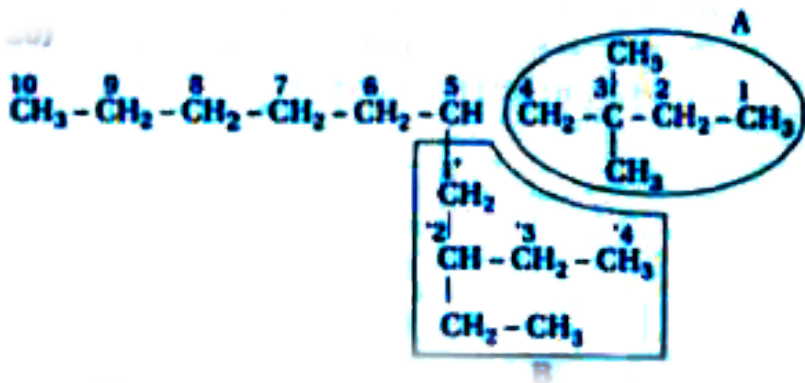
 [View Text Solution](#)

18. Which is the correct name of the following structure? Why?



(i) 3-ethyl-6-methyloctane (ii) 3-methyl-6-ethyloctane (iii) 6-methyl-3-ethyloctane

 [View Text Solution](#)



19.

Which chain is taken as parent chain? Why

 [View Text Solution](#)

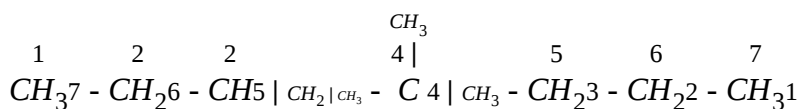
20. Give correct IUPAC name of structure of

 [View Text Solution](#)

21. According to IUPAC, following name is correct for structure of Q-20
why? 5-(2', 2-dimethyl butyl)-3-ethyldecane

 [View Text Solution](#)

22. For writing the following structure, the no,-1 is given to which end?



 [View Text Solution](#)

23. $\text{CH}_3 - \text{CH} |_{\text{CH}_3} - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH} |_{\text{CH}_2 - \text{CH}_2 - \text{CH}_3} - \text{CH}_2 - \text{CH}_3$

How many carbon containing parent chain in above structure?

 [View Text Solution](#)

24. Which is correct of the following in structure of ?

- (i) 2-methyl-6-ethylnonane (ii) 6-ethyl-2-methylnonane (iii) 4-ethyl-8-methylnonane

 [View Text Solution](#)

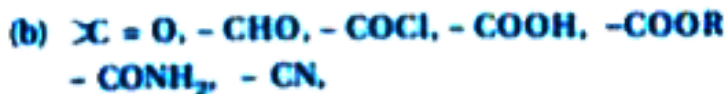
25. Which of the following is correct IUPAC name of $CH_3 - CH | CH_3 - CH_2 - CH | CH_3 - CH_3$? Why? (i) 2-methyl-4-methylpentane (ii) 2, methyl, 4, methylpentane (iii) 2-4 dimethyl pentene (iv) 2, 4-dimethylpentane (v) 2, 4-dimethyl pentane

 [View Text Solution](#)

26. $CH_3 - CH | CH_3 - CH_2 - CH | CH_3 -$ group is in branch of molecule then what is the following name is correct? (i) 2, 4-dimethylbutyl (ii) 1, 3-dimethylbutyl

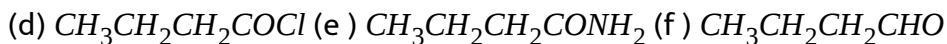
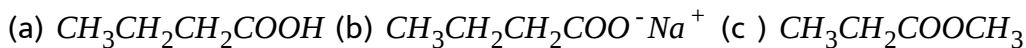
 [View Text Solution](#)

27. Arrange the following in decreasing order of priority for functional group of organic compound?



 [View Text Solution](#)

28. Which are the functional group in the following? Write its name, suffix and prefix



 [View Text Solution](#)

29. In following match column-I containing formula with column-II containing their name.

Column-I	Column-II
(i) CH_3COCH_3	(a) Aldehyde
(ii) $\text{CH}_3\text{CH}_2\text{CHO}$	(b) Ketone
(iii) $\text{CH}_3\text{CH}_2\text{COOH}$	(c) Propanene
	(d) Oxo
	(e) One
	(f) al.
	(g) ethanoic acid

(ii) → (b), (c), (d), (e)

 [View Text Solution](#)

30. Give IUPAC name and its functional group of the following

- (i) $\text{CH}_3\text{SO}_3\text{H}$ (ii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{NO}_2$ (iii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CONH}_2$ (iv)
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2\text{CHCH}_3$ (v) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{COCl}$ (vi) $\text{CH}_3\text{CH}_2\text{CN}$ (vii)
 $\text{CH}_3\text{CH}_2\text{CHO}$ (viii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$

 [View Text Solution](#)

31. Write prefix and suffix in the following functional group?

- (i) $-\text{COCl}$ (ii) $-\text{CONH}_2$ (iii) $-\text{COOR}$ (iv) $-\text{C}|_{\text{H}}=\text{O}$ (v) $-\text{C}|_{\text{OH}}=\text{O}$ (vi)



 [View Text Solution](#)

32. Give formula structure of the following

(i) Ethanoic acid (ii) ethanal (iii) ethanol (iv) ethene (v) ethyne (vi) ethanonitric (vii) ethanoyl chloride (viii) ethyl ethanoate (ix) butanone (x) ethanamide

 [View Text Solution](#)

33. Write IUPAC and common name of the following:

(i) $CH_2OH - CH_2 - CH_2OH$ (ii) $CH_2OH - CHOH - CH_2OH$ (iii) $CHO - CHO$
(iv) $Cl - CH_2 - COOH$ (v) CH_3COOCH_3 (vi) $CH_3COOCH_2CH_3$ (vii) $HCOOH$
(viii) $COOH - COOH$ (ix) CH_2Cl_2 (x) $CHCl_3$ (xi) $CHCl_2CCl_3$

 [View Text Solution](#)

34. Give the structure of following:

(i) 4-(1, 1-dimethyl propyl)-3-ethyl -4, 7-dimethyldecane

(ii) 5-(1-methylbutyl)-7-(2-methylbutyl) undecane

 [View Text Solution](#)

35. Give structure of following

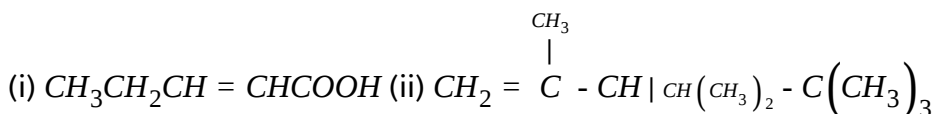
(a) 3, 4-dimethyl-hexane (b) 4, 5-diethyl -5-methylnonane (c)

Methylcyclopentane (d) 1, 3, 5 triethylcyclohexane (e) Buta -1, 3-diene (f)

Buta -1, 3-diene (g) Hexa-1, 3-diene -5-yne

 [View Text Solution](#)

36. Give IUPAC name of following:



 [View Text Solution](#)

37. What is heterolytic cleavage of chemical bond?

 [View Text Solution](#)

38. What happened when chemical reaction occurs?

 [View Text Solution](#)

39. What is the fission of covalent bonds?

 [View Text Solution](#)

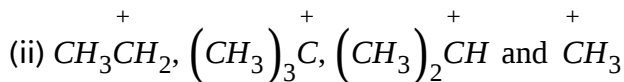
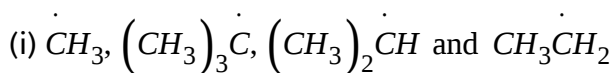
40. Give heterolytic and homolytic cleavage of $H_3C - Br$.

 [View Text Solution](#)

41. If heterolytic and hemolytic cleavage of bond then which type of reaction occurs?

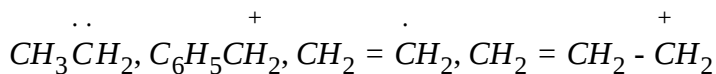
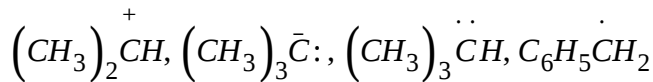
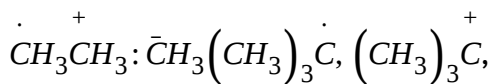
 [View Text Solution](#)

42. Arrange the following in decreasing order of stability.



 [View Text Solution](#)

43. Classify the following in carbocation, free radical and carbanion.



 [View Text Solution](#)

44. Write in ascending order of stability of 1° , 2° and 3° carbocation and free radicals

 [View Text Solution](#)

45. What is free radicals, carbanions and carbocations? How they form?

 [View Text Solution](#)

46. Write homo and heterolytic fission of C-Br bond in $CH_3CH_2 - Br$

 [View Text Solution](#)

47. When the positive and negative charge present on carbon ? Give example

 [View Text Solution](#)

48. What is the valency of carbon ? When carbon posses three bond still it does not have charge, when such thing happends ? Why?

 [View Text Solution](#)

49. Represent structure of the free radical, carbocation and carbanion from methane.

 [View Text Solution](#)

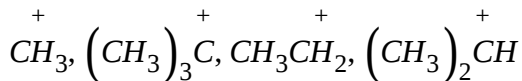
50. Arrange the following according to instruction.

(i) Arrange in desending order of its acidic strength.

CH_3COOH , $(CH_3)_3CCOOH$, $(CH_3)_2CHCOOH$, CH_3CH_2COOH

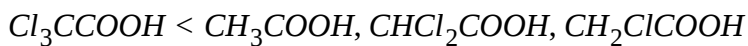
 [View Text Solution](#)

51. Arrange in descending order of its stability.



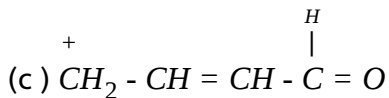
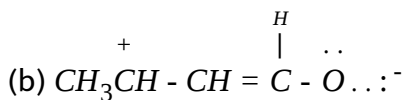
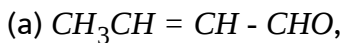
 [View Text Solution](#)

52. Increasing order of acidic strength



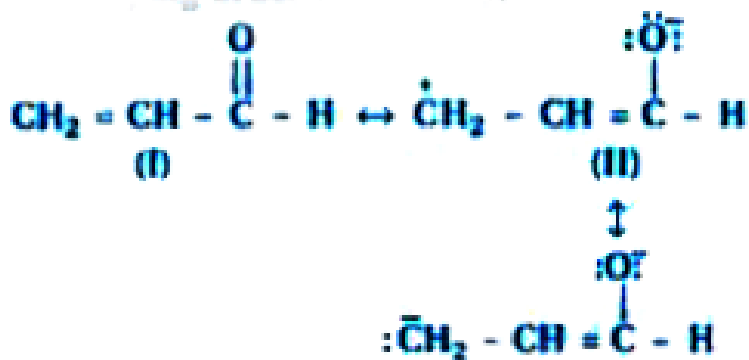
 [View Text Solution](#)

53. Increasing order of stability



 [View Text Solution](#)

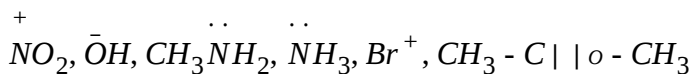
54. Decreasing order of stability



 [View Text Solution](#)

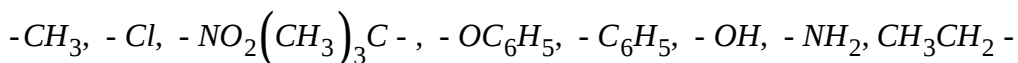
55. Classify following:

(i) Give classification in Nucleophilic and Electrophilic

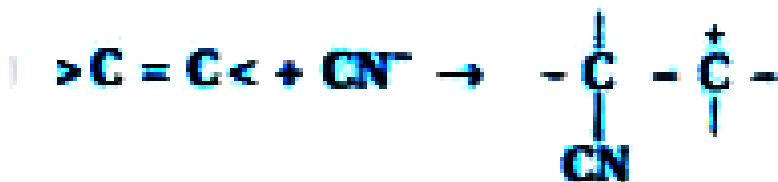


 [View Text Solution](#)

56. Electron withdrawing and electron donating inductive effect.



57. Positive and Negative electromeric effect

[View Text Solution](#)

58. Draw the hyperconjugation resonance structure of (a) $\text{CH}_3\overset{+}{\text{C}}\text{H} = \text{CH}_2$

(b) $\text{CH}_3\overset{+}{\text{C}}\text{H}_2$ (c) $\text{CH}_3\overset{+}{\text{C}}\text{H}_2\text{CH}_2$

[View Text Solution](#)

59. How the electron movement is represent?

 [View Text Solution](#)

60. Give four formula of carbocations

 [View Text Solution](#)

61. Represent the three type of electron movement in organic reaction

 [View Text Solution](#)

62. Represent the single electron movement of $CH_3 - Cl$ bond

 [View Text Solution](#)

63. What is the effect in covalent bond by electron displacement?

 [View Text Solution](#)

64. The electron displacement in covalent bond of molecule is produced by which type of effect?

 [View Text Solution](#)

65. How the inductive effect is differ from resonance and electromeric effect?

 [View Text Solution](#)

66. What is multiple bond?

 [View Text Solution](#)

67. What is electromeric effect?

 [View Text Solution](#)

68. What is the difference between mesomeric effect and resonance effect ?

 [View Text Solution](#)

69. What is the characteristic of resonance structure?

 [View Text Solution](#)

70. What is the difference between inductive effect and resonance effect?

 [View Text Solution](#)

71. Which type of electronic effects seen in structure of molecule?

 [View Text Solution](#)

72. What are the characteristics of inductive effect?

 [View Text Solution](#)

73. In $\overset{3}{\text{CH}_3} - \overset{2}{\text{CH}_2} \overset{1}{\text{CH}_2} - \text{Cl}$, Give the increasing order of inductive effect 1, 2, 3 carbon.

 [View Text Solution](#)

74. What is resonance energy?

 [View Text Solution](#)

75. The value of resonance energy of nitromethane is represented by which equation?

 [View Text Solution](#)

76. What is the difference between resonance structure of $CH_3CH_2COO^-$ and CH_3COOH ?

 [View Text Solution](#)

77. What is positive resonance or inductive effect of group?

 [View Text Solution](#)

78. Explain delocalization of electron in $CH_3\overset{+}{C}H_2$ and $CH_3CH = CH_2$

 [View Text Solution](#)

79. Represent hyperconjugation in $CH_3\overset{+}{C}H_2$ and $CH_3CH = CH_2$ by only figure

 [View Text Solution](#)

80. What happened in hyperconjugation?

 [View Text Solution](#)

81. In benzene any one resonance structure is not correct from two given structure ? Why?

 [View Text Solution](#)

82. In which type of molecule, the electron of π bond are delocalised?

 [View Text Solution](#)

83. What is mother liquor?

 [View Text Solution](#)

84. How will you separate a mixture of two organic compound which have different solubilities in the same solvent?

 [View Text Solution](#)

85. By the crystallisation of impure compound if mother liquor becomes colour then what shall be done to remove colour?

 [View Text Solution](#)

86. Give the answer of the following question in short.

- (i) When the simple distillation is used?
- (ii) When the fractional distillation is used?
- (iii) Which liquid is first obtain in fractional distillation?
- (iv) Which liquid is first cooled in fractional distillation?
- (v) What happend in fractional column?

 [View Text Solution](#)

87. The vapour of which liq present at upper and lower side of distillation coloum?



[View Text Solution](#)

88. What is theoretical plate?



[View Text Solution](#)

89. How the glycerol is separated from execs spent-lye in soap industry?



[View Text Solution](#)

90. When the vapour distillation is applied?



[View Text Solution](#)

91. What is collected in the flask at the end in vapour phase distillation?

 [View Text Solution](#)

92. How is the pure liquid is separated from two mixture obtained by vapour distillation?

 [View Text Solution](#)

93. At what temperature and pressure the liquid is vapourise in vapour phase distillation?

 [View Text Solution](#)

94. The boiling point of aniline is 457k. At which temperature aniline boils in simple distillation and in vepour distillation?

 [View Text Solution](#)

95. Compare the pressure of aniline and water in vapour phase destitution

 [View Text Solution](#)

96. Give the purification technique of following mixture.

(i) Chloroform and aniline (ii) Impure acetone (iii) Impure aniline (iv) Chlorobenzene and bromobenzene

 [View Text Solution](#)

97. Which technique is used for separation of compound present in aqueous solution ?

 [View Text Solution](#)

98. Which type of solvent is added in aqueous solution in differential extraction method?

 [View Text Solution](#)

99. In differential extraction method in separating funnel, two layers are there. What is the difference in mix before shaking the solution and at the end time?

 [View Text Solution](#)

100. Which is used to reduce pressure in distillation under reduced pressure?

 [View Text Solution](#)

101. Which are the type of chromatography?





[View Text Solution](#)

102. What is the principle of distillation?



[View Text Solution](#)

103. Give difference between paper chromatography and thin layer chromatography



[View Text Solution](#)

104. What is R_f ?



[View Text Solution](#)

105. What is eluant?



[View Text Solution](#)

106. What is the difference between adsorbent and absorbate?

 [View Text Solution](#)

107. Write the application of chromatography

 [View Text Solution](#)

108. What is the chromatogram?

 [View Text Solution](#)

109. The chromatography is used for which type of compounds?

 [View Text Solution](#)

110. What is the characteristic of R_f value ?

 [View Text Solution](#)

111. On which principle the solute moves on chromatography paper?

 [View Text Solution](#)

112. Give the principle of extraction in separatory funnel

 [View Text Solution](#)

113. What will be happened when organic compound fusion with sodium metal?

 [View Text Solution](#)

114. Give only reaction for detection of nitrogen in organic compound

 [View Text Solution](#)

115. In the detection test of nitrogen the prussion blue colour is due to which compound?

 [View Text Solution](#)

116. Give the formulas of followings: (i) Sodium nitropruside (ii) The purple solution made in test of sulphur. (iii) Sodiumhexacyno-ferrate (II) (iv) Iron (III) hexacynoferrate (II) (v) Feriferrocynide (vi) Sodium thiocyanate (vii) Ammonium molibled (viii) Ammonium phosphomolibladate (ix) Ferric thiocyanate iron (x) Sodium sulphide.

 [View Text Solution](#)

117. Give the test for halogen

 [View Text Solution](#)

118. Why the test of nitrogen, sulphur or oxygen is not carried out by direct addition of reagents?

 [View Text Solution](#)

119. What happened with halogen when $AgNO_3$ is added in lassaigne solution of acidify with HNO_3 ?

 [View Text Solution](#)

120. How the silver halide obtained from organic compound is distinguish?

 [View Text Solution](#)

121. Why is nitric acid added to sodium extract before adding silver nitrate for testing halogens?

 [View Text Solution](#)

122. One liquid contain nonvolatile impurity. What technique will be applied for purification of it?

 [View Text Solution](#)

123. Give the technique to separation of the following (i) Mixture of sugar and sand (ii) Mixture of kerosine and water (iii) Mixture of benzene and simple salt. (iv) Mixture of 356K and 365K b.p. contenting liquid. (v) Mixture of aniline and camphor

 [View Text Solution](#)

124. How do you do purification of the following?

(i) The boiling point of liquid X is 450K and it decompose at 400K temperature.

(ii) Mixture of 60% Camphour and 40% $BaSO_4$

 [View Text Solution](#)

125. When TLC solvent get 10cm height then compound (A) gets 8cm and (B) gets 6cm height calculate R_f of A and B

 [View Text Solution](#)

126. In TLC for compound X $R_f = 0.7$ and for B $R_f = 0.4$ which substance migrate more?

 [View Text Solution](#)

127. X and Y has R_f 0.75 and 0.25 respectively. In column chromatography.

Which is obtained first?

 [View Text Solution](#)

128. Give the answer for Lassigne test.

(i) If nitrogen and sulphur both present than which observation is observed?

(ii) If bromine is present then?

(iii) In Lassigne extract by adding CH_3COOH and lead acetate black ppts are not obtained? What is indicate?

(iv) What is the reason to added $FeSO_4$ in Lassigne extract?

(v) Why the prussion blue colour is observed?

(vi) Lassigne extract gives violet colour sodium nitroprusside?

 [View Text Solution](#)

129. Which two organic compound are purify by sublimation technique?



[View Text Solution](#)

130. What is the formula, name and molecular mass of compound. Which obtain by estimation of phosphorus?



[View Text Solution](#)

131. Which compound is formed by heating with nitric acid in estimation of phosphorus in Carious method?



[View Text Solution](#)

132. In detection of halogen what is form by adding $AgNO_3$? What is its colour?



[View Text Solution](#)

133. What is CHN in organic estimation?

 [View Text Solution](#)

134. Give the advantages of CHN method in estimation

 [View Text Solution](#)

135. Give reactions/principles of oxygen estimation method. Compound

Stream of N_2

$\rightarrow \Delta O_2 + \text{other gases}$

 [View Text Solution](#)

136. How the percentage of oxygen is decided in organic estimation?

 [View Text Solution](#)

137. The volume of nitrogen is measured by which apparatus in Dumas method?

 [View Text Solution](#)

138. Which compound are taken in Kjeldahl's flask?

 [View Text Solution](#)

139. In estimation of C and H after absorption of CO_2 , H_2O is absorbed or not? Why?

 [View Text Solution](#)

140. What is the reason to pass dry air in combustion tube in estimation of C and H?

 [View Text Solution](#)

141. Anhydrous calcium chloride is which type of compound?



View Text Solution

142. What is catenation?



View Text Solution

143. What is organic chemistry?



View Text Solution

144. How the modern shape develop in organic chemistry?



View Text Solution

145. In organic compound, what is the effect of hybridisation of carbon on bond length and bond enthalpy?

 [View Text Solution](#)

146. What is the proportion of s-character in sp^3 , sp^2 and sp hybrid orbitals? What is the order of electronegativity in it?

 [View Text Solution](#)

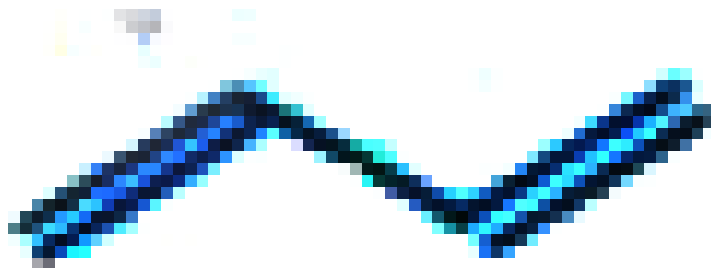
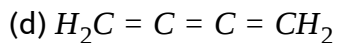
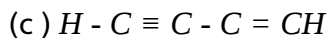
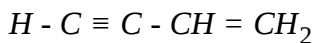
147. The shape of molecule is depend on which factor?

 [View Text Solution](#)

148. What is the type of hybridisation of carbon atom in the following ?

(a) What is hybridisation of carbon $N \equiv C - CH = CH_2$

(b) The carbon of single bond C-C in



 [View Text Solution](#)

149. How many σ and π bonds are present in the following

- (a) But-1-ene-3-yne (b) Buta-1, 3-diene (c) $CH_2 = CH - C \equiv N$ (d) Propan-1, 2, 3-diene (e) 1-butene and 2-butane

 [View Text Solution](#)

150. Classify the following compounds in Acyclic, Alicyclic, Benzenoid and non-benzenoid: Tropone, Propane, Benzene, Butene, ethane, acetic acid, tetrahydrofuran, cyclohexene, Naphthalene, cyclobutane



[View Text Solution](#)

151. Give the method of three-dimensional representation of organic molecule



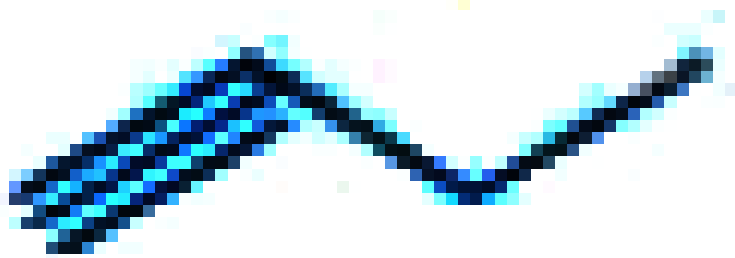
[View Text Solution](#)

152. What indicate by corner and end in the bond line structure method of organic compound?



[View Text Solution](#)

153. Give number of H atom attach with terminate carbon in



[View Text Solution](#)

154. What is the limitation of framework model?

[View Text Solution](#)

155. What is used to represent the C=C in ball and stick model?

[View Text Solution](#)

156. Draw figure of framework model, ball and stick model and space filling model of methane.

 [View Text Solution](#)

157. What indicate these

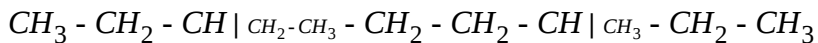
is solid dash
model of organic molecule?

 [View Text Solution](#)

158. In 3D representation of organic molecule, which model is indicate atomic size?

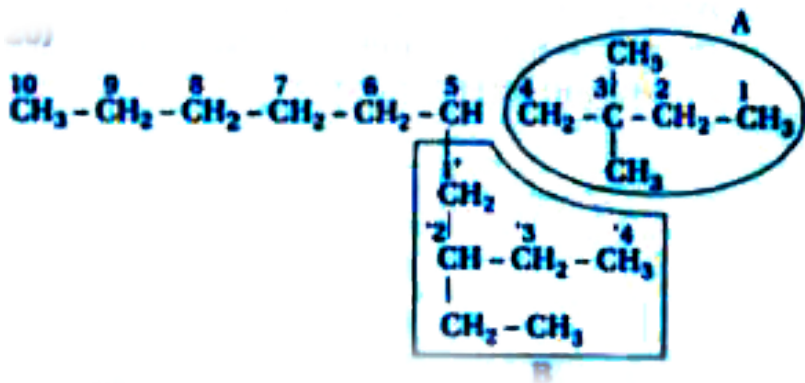
 [View Text Solution](#)

159. Which is the correct name of the following structure? Why?



(i) 3-ethyl-6-methyloctane (ii) 3-methyl-6-ethyloctane (iii) 6-methyl-3-ethyloctane

 View Text Solution



160.

Which chain is taken as parent chain? Why

 View Text Solution

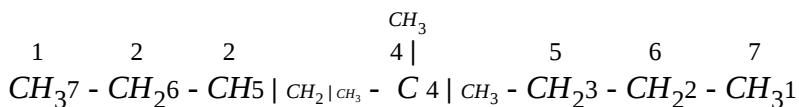
161. Give correct IUPAC name of structure of

 [View Text Solution](#)

162. According to IUPAC, following name is correct for structure of Q-20
why? 5-(2', 2-dimethyl butyl)-3-ethyldecane

 [View Text Solution](#)

163. For writing the following structure, the no., 1 is given to which end?



 [View Text Solution](#)

164. $\text{CH}_3 - \text{CH} | \text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_2 - \text{CH} | \text{CH}_2 - \text{CH}_2 - \text{CH}_3 - \text{CH}_2 - \text{CH}_3$

How many carbon containing parent chain in above structure?

 [View Text Solution](#)

165. Which is correct of the following in structure of ?

- (i) 2-methyl-6-ethylnonane (ii) 6-ethyl-2-methylnonane (iii) 4-ethyl-8-methylnonane

 [View Text Solution](#)

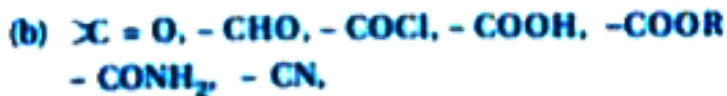
166. Which of the following is correct IUPAC name of $CH_3 - CH |_{CH_3} - CH_2 - CH |_{CH_3} - CH_3$? Why? (i) 2-methyl-4-methylpentane (ii) 2, methyl, 4, methylpentane (iii) 2-4 dimethyl pentene (iv) 2, 4-dimethylpentane (v) 2, 4-dimethyl pentane

 [View Text Solution](#)

167. $CH_3 - CH |_{CH_3} - CH_2 - CH |_{CH_3} -$ group is in branch of molecule then what is the following name is correct? (i) 2, 4-dimethylbutyl (ii) 1, 3-dimethylbutyl

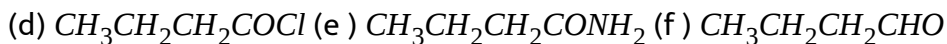
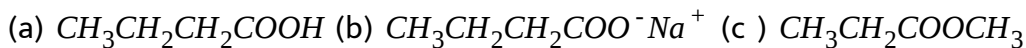
 [View Text Solution](#)

168. Arrange the following in decreasing order of priority for functional group of organic compound?



 [View Text Solution](#)

169. Which are the functional group in the following? Write its name, suffix and prefix



 [View Text Solution](#)

170. In following match column-I containing formula with column-II containing their name.

Column-I	Column-II
(i) CH_3COCH_3	(a) Aldehyde
(ii) $\text{CH}_3\text{CH}_2\text{CHO}$	(b) Ketone
(iii) $\text{CH}_3\text{CH}_2\text{COOH}$	(c) Propanene
	(d) Oxo
	(e) One
	(f) al.
	(g) ethanoic acid

(11) → (1b) (1c) (1d) (1e)

 [View Text Solution](#)

171. Give IUPAC name and its functional group of the following

- (i) $\text{CH}_3\text{SO}_3\text{H}$ (ii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{NO}_2$ (iii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{CONH}_2$ (iv)
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{NH}_2\text{CHCH}_3$ (v) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_2\text{COCl}$ (vi) $\text{CH}_3\text{CH}_2\text{CN}$ (vii)
 $\text{CH}_3\text{CH}_2\text{CHO}$ (viii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{OH}$

 [View Text Solution](#)

172. Write prefix and suffix in the following functional group?

- (i) $-\text{COCl}$ (ii) $-\text{CONH}_2$ (iii) $-\text{COOR}$ (iv) $-\text{C}|_{\text{H}}=\text{O}$ (v) $-\text{C}|_{\text{OH}}=\text{O}$ (vi)

$-C \mid x = O$ (vii) $-C \mid = O$ (viii) $-C \equiv N$ (ix) $-C \mid \mid o - O^-$

 [View Text Solution](#)

173. Give formula structure of the following

(i) Ethanoic acid (ii) ethanal (iii) ethanol (iv) ethene (v) ethyne (vi) ethanonitric (vii) ethanoyl chloride (viii) ethyl ethanoate (ix) butanone (x) ethanamide

 [View Text Solution](#)

174. Write IUPAC and common name of the following:

(i) $CH_2OH - CH_2 - CH_2OH$ (ii) $CH_2OH - CHOH - CH_2OH$ (iii) $CHO - CHO$
(iv) $Cl - CH_2 - COOH$ (v) CH_3COOCH_3 (vi) $CH_3COOCH_2CH_3$ (vii) $HCOOH$
(viii) $COOH - COOH$ (ix) CH_2Cl_2 (x) $CHCl_3$ (xi) $CHCl_2CCl_3$

 [View Text Solution](#)

175. Give the structure of following:

(i) 4-(1, 1-dimethyl propyl)-3-ethyl -4, 7-dimethyldecane

(ii) 5-(1-methylbutyl)-7-(2-methylbutyl) undecane

 [View Text Solution](#)

176. Give structure of following

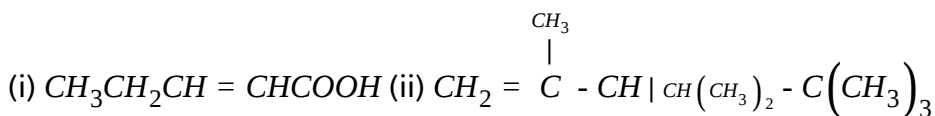
(a) 3, 4-dimethyl-hexane (b) 4, 5-diethyl -5-methylnonane (c)

Methylcyclopentane (d) 1, 3, 5 triethylcyclohexane (e) Buta -1, 3-diene (f)

Buta -1, 3-diene (g) Hexa-1, 3-diene -5-yne

 [View Text Solution](#)

177. Give IUPAC name of following:



 [View Text Solution](#)

178. What is heterolytic cleavage of chemical bond?

 [View Text Solution](#)

179. What happened when chemical reaction occurs?

 [View Text Solution](#)

180. What is the fission of covalent bonds?

 [View Text Solution](#)

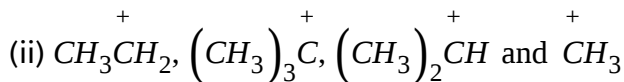
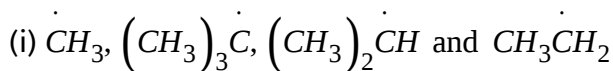
181. Give heterolytic and homolytic cleavage of $H_3C - Br$.

 [View Text Solution](#)

182. If heterolytic and homolytic cleavage of bond then which type of reaction occurs?

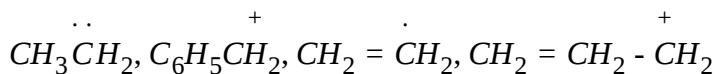
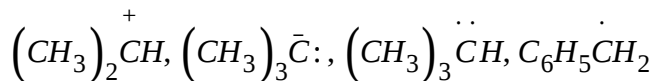
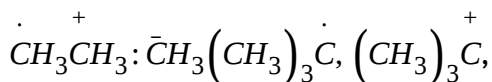
 [View Text Solution](#)

183. Arrange the following in decreasing order of stability.



 [View Text Solution](#)

184. Classify the following in carbocation, free radical and carbanion.



 [View Text Solution](#)

185. Write in ascending order of stability of 1° , 2° and 3° carbocation and free radicals

 [View Text Solution](#)

186. What is free radicals, carbanions and carbocations? How they form?

 [View Text Solution](#)

187. Write homo and heterolytic fission of C-Br bond in $CH_3CH_2 - Br$

 [View Text Solution](#)

188. When the positive and negative charge present on carbon ? Give example

 [View Text Solution](#)

189. What is the valency of carbon ? When carbon possesses three bonds still it does not have a charge, when such a thing happens ? Why?

 [View Text Solution](#)

190. Represent the structure of the free radical, carbocation and carbanion from methane.

 [View Text Solution](#)

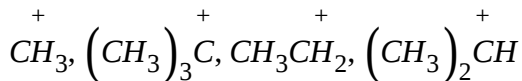
191. Arrange the following according to instruction.

(i) Arrange in descending order of its acidic strength.

CH_3COOH , $(CH_3)_3CCOOH$, $(CH_3)_2CHCOOH$, CH_3CH_2COOH

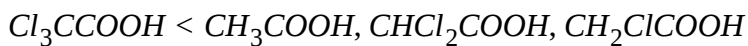
 [View Text Solution](#)

192. Arrange in descending order of its stability.



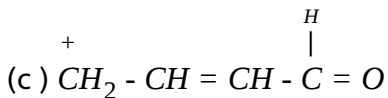
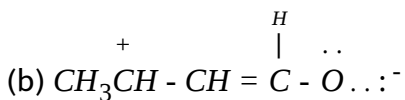
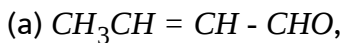
 [View Text Solution](#)

193. Increasing order of acidic strength



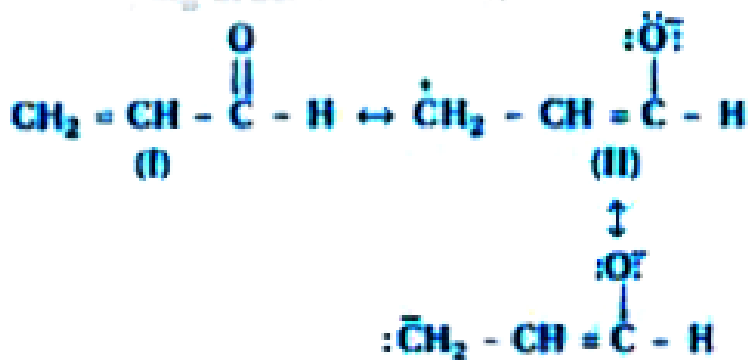
 [View Text Solution](#)

194. Increasing order of stability



 [View Text Solution](#)

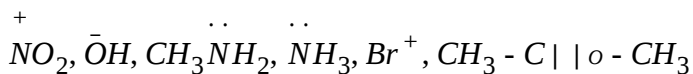
195. Decreasing order of stability



 [View Text Solution](#)

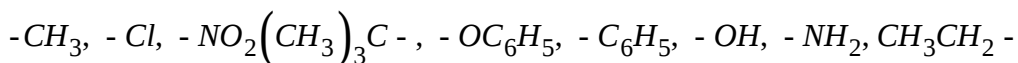
196. Classify following:

(i) Give classification in Nucleophilic and Electrophilic

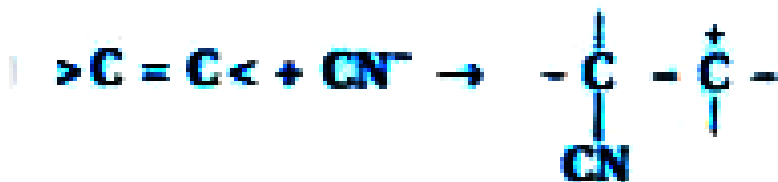


 [View Text Solution](#)

197. Electron withdrawing and electron donating inductive effect.



198. Positive and Negative electromeric effect



 View Text Solution

199. Draw the hyperconjugation resonance structure of (a) $CH_3CH=CH_2$

(b) $CH_3CH_2^+$ (c) $CH_3CH_2CH_2^+$

 View Text Solution

200. How the electron movement is represent?

 [View Text Solution](#)

201. Give four formula of carbocations

 [View Text Solution](#)

202. Represent the three type of electron movement in organic reaction

 [View Text Solution](#)

203. Represent the single electron movement of $CH_3 - Cl$ bond

 [View Text Solution](#)

204. What is the effect in covalent bond by electron displacement?

 [View Text Solution](#)

205. The electron displacement in covalent bond of molecule is produced by which type of effect?

 [View Text Solution](#)

206. How the inductive effect differs from resonance and electromeric effect?

 [View Text Solution](#)

207. What is a multiple bond?

 [View Text Solution](#)

208. What is the electromeric effect?

 [View Text Solution](#)

209. What is the difference between mesomeric effect and resonance effect ?

 [View Text Solution](#)

210. What is the characteristic of resonance structure?

 [View Text Solution](#)

211. What is the difference between inductive effect and resonance effect?

 [View Text Solution](#)

212. Which type of electronic effects seen in structure of molecule?

 [View Text Solution](#)

213. What is the characteristics of inductive effect?

 [View Text Solution](#)

214. In $\overset{3}{CH_3} - \overset{2}{CH_2} - \overset{1}{CH_2} - Cl$, Give the increasing order of inductive effect 1, 2, 3 carbon.

 [View Text Solution](#)

215. What is resonance energy?

 [View Text Solution](#)

216. The value of resonance energy of nitromethane is represent by which equation?

 [View Text Solution](#)

217. What is the difference between resonance structure of $CH_3CH_2COO^-$ and CH_3COOH ?

 [View Text Solution](#)

218. What is positive resonance or inductive effect of group?

 [View Text Solution](#)

219. Explain delocalization of electron in $CH_3\overset{+}{C}H_2$ and $CH_3CH = CH_2$

 [View Text Solution](#)

220. Represent hyperconjugation in $CH_3\overset{+}{C}H_2$ and $CH_3CH = CH_2$ by only figure

 [View Text Solution](#)

221. What happened in hyperconjugation?

 [View Text Solution](#)

222. In benzene any one resonance structure is not correct from two given structure ? Why?

 [View Text Solution](#)

223. In which type of molecule, the electron of π bond are delocalised?

 [View Text Solution](#)

224. What is mother liquor?

 [View Text Solution](#)

225. How will you separate a mixture of two organic compound which have different solubilities in the same solvent?

 [View Text Solution](#)

226. By the crystallisation of impure compound if mother liquor becomes colour then what shall be done to remove colour?

 [View Text Solution](#)

227. Give the answer of the following question in short.

- (i) When the simple distillation is used?
- (ii) When the fractional distillation is used?
- (iii) Which liquid is first obtain in fractional distillation?
- (iv) Which liquid is first cooled in fractional distillation?
- (v) What happend in fractional column?

 [View Text Solution](#)

228. The vapour of which liq present at upper and lower side of distillation coloum?

 [View Text Solution](#)

229. What is theoretical plate?

 [View Text Solution](#)

230. How the glycerol is separated from execs spent-lye in soap industry?

 [View Text Solution](#)

231. When the vapour distillation is applied?

 [View Text Solution](#)

232. What is collected in the flask at the end in vapour phase distillation?

 [View Text Solution](#)

233. How is the pure liquid is separated from two mixture obtained by vapour distillation?

 [View Text Solution](#)

234. At what temperature and pressure the liquid is vapourise in vapour phase distillation?

 [View Text Solution](#)

235. The boiling point of aniline is 457k. At which temperature aniline boils in simple distillation and in vepour distillation?

 [View Text Solution](#)

236. Compare the pressure of aniline and water in vapour phase destitution

 [View Text Solution](#)

237. Give the purification technique of following mixture.

(i) Chloroform and aniline (ii) Impure acetone (iii) Impure aniline (iv) Chlorobenzene and bromobenzene

 [View Text Solution](#)

238. Which technique is used for separation of compound present in aqueous solution ?

 [View Text Solution](#)

239. Which type of solvent is added in aqueous solution in differential extraction method?

 [View Text Solution](#)

240. In differential extraction method in separating funnel, two layers are there. What is the difference in mix before shaking the solution and at the end time?

 [View Text Solution](#)

241. Which is used to reduce pressure in distillation under reduced pressure?

 [View Text Solution](#)

242. Which are the type of chromatography?



 [View Text Solution](#)

243. What is the principle of distillation?

 [View Text Solution](#)

244. Give difference between paper chromatography and thin layer chromatography

 [View Text Solution](#)

245. What is R_f ?

 [View Text Solution](#)

246. What is eluant?

 [View Text Solution](#)

247. What is the difference between adsorbent and absorbate?

 [View Text Solution](#)

248. Write the application of chromatography

 [View Text Solution](#)

249. What is the chromatogram?

 [View Text Solution](#)

250. The chromatography is used for which type of compounds?

 [View Text Solution](#)

251. What is the characteristic of R_f value ?

 [View Text Solution](#)

252. On which principle the solute moves on chromatography paper?

 [View Text Solution](#)

253. Give the principle of extraction in separatory funnel

 [View Text Solution](#)

254. What will be happened when organic compound fusion with sodium metal?

 [View Text Solution](#)

255. Give only reaction for detection of nitrogen in organic compound

 [View Text Solution](#)

256. In the detection test of nitrogen the prussion blue colour is due to which compound?

 [View Text Solution](#)

257. Give the formulas of followings: (i) Sodium nitropruside (ii) The purple solution made in test of sulphur. (iii) Sodiumhexacyno-ferrate (II) (iv) Iron (III) hexacynoferrate (II) (v) Feriferrocynide (vi) Sodium thiocyanate (vii) Ammonium molibled (viii) Ammonium phosphomolibladate (ix) Ferric thiocyanate iron (x) Sodium sulphide.

 [View Text Solution](#)

258. Give the test for halogen

 [View Text Solution](#)

259. Why the test of nitrogen, sulphur or oxygen is not carried out by direct addition of reagents?

 [View Text Solution](#)

260. What happened with halogen when $AgNO_3$ is added in lassaigne solution of acidify with HNO_3 ?

 [View Text Solution](#)

261. How the silver halide obtained from organic compound is distinguish?

 [View Text Solution](#)

262. Why is nitric acid added to sodium extract before adding silver nitrate for testing halogens?

 [View Text Solution](#)

263. One liquid contain nonvolatile impurity. What technique will be applied for purification of it?

 [View Text Solution](#)

264. Give the technique to separation of the following (i) Mixture of sugar and sand (ii) Mixture of kerosine and water (iii) Mixture of benzene and simple salt. (iv) Mixture of 356K and 365K b.p. contenting liquid. (v) Mixture of aniline and camphor

 [View Text Solution](#)

265. How do you do purification of the following?

(i) The boiling point of liquid X is 450K and it decompose at 400K temperature.

(ii) Mixture of 60% Camphour and 40% $BaSO_4$

 [View Text Solution](#)

266. When TLC solvent get 10cm height then compound (A) gets 8cm and (B) gets 6cm height calculate R_f of A and B

 [View Text Solution](#)

267. In TLC for compound X $R_f = 0.7$ and for B $R_f = 0.4$ which substance migrate more?

 [View Text Solution](#)

268. X and Y has R_f 0.75 and 0.25 respectively. In column chromatography.

Which is obtained first?

 [View Text Solution](#)

269. Give the answer for Lassigne test.

(i) If nitrogen and sulphur both present than which observation is observed?

(ii) If bromine is present then?

(iii) In Lassigne extract by adding CH_3COOH and lead acetate black ppts are not obtained? What is indicate?

(iv) What is the reason to added $FeSO_4$ in Lassigne extract?

(v) Why the prussion blue colour is observed?

(vi) Lassigne extract gives violet colour sodium nitroprusside?

 [View Text Solution](#)

270. Which two organic compound are purify by sublimation technique?



[View Text Solution](#)

271. What is the formula, name and molecular mass of compound. Which obtain by estimation of phosphorus?



[View Text Solution](#)

272. Which compound is formed by heating with nitric acid in estimation of phosphorus in Carious method?



[View Text Solution](#)

273. In detection of halogen what is form by adding $AgNO_3$? What is its colour?



[View Text Solution](#)

274. What is CHN in organic estimation?

 [View Text Solution](#)

275. Give the advantages of CHN method in estimation

 [View Text Solution](#)

276. Give reactions/principles of oxygen estimation method. Compound

Stream of N_2

$\rightarrow \Delta O_2 + \text{other gases}$

 [View Text Solution](#)

277. How the percentage of oxygen is decided in organic estimation?

 [View Text Solution](#)

278. The volume of nitrogen is measured by which apparatus in Dumas method?

 [View Text Solution](#)

279. Which compound are taken in Kjeldahl's flask?

 [View Text Solution](#)

280. In estimation of C and H after absorption of CO_2 , H_2O is absorbed or not? Why?

 [View Text Solution](#)

281. What is the reason to pass dry air in combustion tube in estimation of C and H?

 [View Text Solution](#)

282. Anhydrous calcium chloride is which type of compound?

 [View Text Solution](#)

Section-B - Match the following

1. Match column-I and column-II with correct relation.

1)	Column-I	Column-II
(i)	Aromatic	(a) Tropolone
(ii)	Branched acyclic	(b) Neopentane
(iii)	Alicyclic	(c) Cyclohexine
(iv)	Non-benzenoid	(d) Aniline

 [View Text Solution](#)

2)	Column-I	Column-II
(i)	Substitution reaction	(p) $\text{CH}_2 = \text{CH}_2 + \text{Br}_2 \rightarrow \text{CH}_3 - \text{CH}_2 \text{Br}$
(ii)	Addition reaction	(q) $\text{C}_6\text{H}_6 + \overset{\cdot}{\text{NO}}_2 \rightarrow \text{C}_6\text{H}_5\text{NO}_2 + \text{H}^+$
(iii)	Electrophilic addition reaction	(r) $\text{CH}_3\text{Cl} + \text{NaOH} \rightarrow \text{CH}_3\text{OH} + \text{NaCl}$
(iv)	Electrophilic substitution reaction	(s) $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow[\Delta]{\text{Al}_2\text{O}_3} \text{CH}_2 = \text{CH}_2$
(v)	Elimination reaction	

2.

 [View Text Solution](#)

3)	Column-I	Column-II
(i)	$\text{C}_6\text{H}_5\text{NH}_2$	(p) -R effect
(ii)	$\text{C}_6\text{H}_5\text{OH}$	(q) +R effect
(iii)	$\text{C}_6\text{H}_5\text{NO}_2$	(r) (+I)
(iv)	$\text{CH}_3\text{CH}_2\text{Cl}$	(s) (-I)

3.

 [View Text Solution](#)

4)	Column-I	Column-II
(i)	Aniline + chloroform	(a) Steam distillation
(ii)	Aqueous solution of compound	(b) Fractional distillation
(iii)	Mixture of liquids contain less difference in b.p.	(c) Differential extraction
(iv)	Purification of aniline	(d) Simple distillation

4.



[View Text Solution](#)

5)	Column-I	Column-II
(i)	Differential extraction	(p) High difference of boiling point.
(ii)	Steam distillation	(q) Sparatory funnel
(iii)	Distillation at low	(r) Component of pressure
(iv)	Simple distillation	(s) Liquid decompose at high temperature
(iv)	Fractional distillation	(t) Vacuum pump

5.



[View Text Solution](#)

6)	Column-I	Column-II
(i)	Liquid boiled at low temperature	(a) Fractional columns
(ii)	Glycerol from lie	(b) Simple distillation
(iii)	The low boiling point containing liquid condensed first	(c) Steam distillation
(iv)	The high b.p. containing liquid condensed first	(d) Distillation at low pressure

6.



[View Text Solution](#)

7)	Column-I	Column-II
(i)	Prussian blue	(a) Presence of phosphorus
(ii)	Yellow precipitate	(b) Presence of sulphur
(iii)	Purple solution	(c) Presence of nitrogen
(iv)	Black precipitate	(d) presence of chlorine

7.



[View Text Solution](#)

8)	Column-I	Column-II
(i)	Blood like red colour	(a) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$
(ii)	Sodium nitroprusside	(b) $(\text{NH}_4)_2\text{MoO}_4$
(iii)	Ammonium molybdate	(c) $[\text{Fe}(\text{SCN})]^{2+}$
(iv)	Ferri-ferricyanide	(d) $\text{Na}_2[\text{Fe}(\text{CN})_5\text{NO}]$

8.



[View Text Solution](#)

9)	Column-I	Column-II
(i)	Lassaigne's test	(a) By sodium peroxide
(ii)	Test for nitrogen	(b) Acidify with acetic acid
(iii)	Test for sulphur	(c) Acidify with cone. sulphuric acid
(iv)	Test for phosphorus	(d) Fusion with sodium

9.



[View Text Solution](#)

10)	Column-I	Column-II
(i)	Estimation of carbon and hydrogen	(p) AgX
(ii)	Estimation of nitrogen	(q) CO ₂ and H ₂ O
(iii)	Estimation of halogen	(r) N ₂
(iv)	Estimation of sulphur	(s) Mg ₂ P ₂ O ₇
(v)	Estimation of phosphorous	(t) BaSO ₄

10.

 [View Text Solution](#)

11)	Column-I	Column-II
(i)	Dumas method	(a) Absorption of NH ₃ in H ₂ SO ₄
(ii)	Kjeldahl's method	(b) BaCl ₂ by added BaSO ₄
(iii)	Carius method	(c) Mixture of Magnesia
(iv)	Estimation of phosphorous	(d) N ₂

11.

 [View Text Solution](#)

12)	Column-I	Column-II
(i)	Ammonium phosphomolybdate	(a) $(\text{NH}_4)_2 \text{MoO}_4$
(ii)	Ammonium phosphate	(b) $\text{Mg}^{2+} + \text{NH}_4\text{OH}$
(iii)	Mixture of magnesia	(c) H_3PO_4
(iv)	Ammonium molybdate	(d) $(\text{NH}_4)_3\text{PO}_4$
(v)	Phosphoric acid	(e) $(\text{NH}_4)_3\text{PO}_4 \cdot 12\text{MoO}_3$

12.

 [View Text Solution](#)

	Column-I	Column-II
(i)	Magnesium pyrophosphate	(a) I_2O_5
(ii)	Barium sulphate	(b) AgX
(iii)	Iodine pentoxide	(c) $\text{Mg}_2\text{P}_2\text{O}_7$
(iv)	Silver halide	(d) BaSO_4

13.

 [View Text Solution](#)

Column-I	Column-II
(i) Barium sulphate	(a) 1877 g
(ii) Magnesium pyrophosphate	(b) 235 g
(iii) Ammonium phoasphomolibladat	(c) 188 g
(iv) Silver chloride	(d) 222 g
(v) Silver bromide	(e) 143.5
(vi) Silver iodide	(f) 233 g

14.

 [View Text Solution](#)

15. Match column-I and column-II with correct relation.

1)	Column-I	Column-II
(i)	Aromatic	(a) Tropolone
(ii)	Branched acyclic	(b) Neopentane
(iii)	Alicyclic	(c) Cyclohexine
(iv)	Non-benzanoid	(d) Aniline

 [View Text Solution](#)

2)	Column-I	Column-II
(i)	Substitution reaction	(p) $\text{CH}_2 = \text{CH}_2 + \text{Br}_2 \rightarrow \text{CH}_3 - \text{CH}_2 \text{Br}$
(ii)	Addition reaction	(q) $\text{C}_6\text{H}_6 + \overset{+}{\text{N}}\text{O}_2 \rightarrow \text{C}_6\text{H}_5\text{NO}_2 + \text{H}^+$
(iii)	Electrophilic addition reaction	(r) $\text{CH}_3\text{Cl} + \text{NaOH} \rightarrow \text{CH}_3\text{OH} + \text{NaCl}$
(iv)	Electrophilic substitution reaction	(s) $\text{CH}_3\text{CH}_2\text{OH} \xrightarrow[\Delta]{\text{Al}_2\text{O}_3} \text{CH}_2 = \text{CH}_2$
(v)	Elimination reaction	

16.



[View Text Solution](#)

3)	Column-I	Column-II
(i)	$\text{C}_6\text{H}_5\text{NH}_2$	(p) -R effect
(ii)	$\text{C}_6\text{H}_5\text{OH}$	(q) +R effect
(iii)	$\text{C}_6\text{H}_5\text{NO}_2$	(r) (+I)
(iv)	$\text{CH}_3\text{CH}_2\text{Cl}$	(s) (-I)

17.



[View Text Solution](#)

4)	Column-I	Column-II
(i)	Aniline + chloroform	(a) Steam distillation
(ii)	Aqueous solution of compound	(b) Fractional distillation
(iii)	Mixture of liquids contain less difference in b.p.	(c) Differential extraction
(iv)	Purification of aniline	(d) Simple distillation

18.

 [View Text Solution](#)

5)	Column-I	Column-II
(i)	Differential extraction	(p) High difference of boiling point.
(ii)	Steam distillation	(q) Sparatory funnel
(iii)	Distillation at low	(r) Component of pressure
(iv)	Simple distillation	(s) Liquid decompose at high temperature
(iv)	Fractional distillation	(t) Vacuum pump

19.

 [View Text Solution](#)

6)	Column-I	Column-II
(i)	Liquid boiled at low temperature	(a) Fractional columns
(ii)	Glycerol from lie	(b) Simple distillation
(iii)	The low boiling point containing liquid condensed first	(c) Steam distillation
(iv)	The high b.p. containing liquid condensed first	(d) Distillation at low pressure

20.



[View Text Solution](#)

7)	Column-I	Column-II
(i)	Prussian blue	(a) Presence of phosphorus
(ii)	Yellow precipitate	(b) Presence of sulphur
(iii)	Purple solution	(c) Presence of nitrogen
(iv)	Black precipitate	(d) presence of chlorine

21.



[View Text Solution](#)

8)	Column-I	Column-II
(i)	Blood like red colour	(a) $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$
(ii)	Sodium nitroprusside	(b) $(\text{NH}_4)_2\text{MoO}_4$
(iii)	Ammonium molybdate	(c) $[\text{Fe}(\text{SCN})]^{2+}$
(iv)	Feri-farros cyanide	(d) $\text{Na}_2[\text{Fe}(\text{CN})_5\text{NO}]$

22.



[View Text Solution](#)

9)	Column-I	Column-II
(i)	Lassaigne's test	(a) By sodium peroxide
(ii)	Test for nitrogen	(b) Acidify with acetic acid
(iii)	Test for sulphur	(c) Acidify with cone. sulphuric acid
(iv)	Test for phosphorus	(d) Fusion with sodium

23.



[View Text Solution](#)

10)	Column-I	Column-II
(i)	Estimation of carbon and hydrogen	(p) AgX
(ii)	Estimation of nitrogen	(q) CO ₂ and H ₂ O
(iii)	Estimation of halogen	(r) N ₂
(iv)	Estimation of sulphur	(s) Mg ₂ P ₂ O ₇
(v)	Estimation of phosphorous	(t) BaSO ₄

24.



[View Text Solution](#)

11)	Column-I	Column-II
(i)	Dumas method	(a) Absorption of NH ₃ in H ₂ SO ₄
(ii)	Kjeldahl's method	(b) BaCl ₂ by added BaSO ₄
(iii)	Carius method	(c) Mixture of Magnesia
(iv)	Estimation of phosphorous	(d) N ₂

25.



[View Text Solution](#)

12)	Column-I	Column-II
(i)	Ammonium phosphomolybdate	(a) $(\text{NH}_4)_2 \text{MoO}_4$
(ii)	Ammonium phosphate	(b) $\text{Mg}^{2+} + \text{NH}_4\text{OH}$
(iii)	Mixture of magnesia	(c) H_3PO_4
(iv)	Ammonium molybdate	(d) $(\text{NH}_4)_3\text{PO}_4$
(v)	Phosphoric acid	(e) $(\text{NH}_4)_3\text{PO}_4 \cdot 12\text{MoO}_3$

26.

 [View Text Solution](#)

	Column-I	Column-II
(i)	Magnesium pyrophosphate	(a) I_2O_5
(ii)	Barium sulphate	(b) AgX
(iii)	Iodine pentoxide	(c) $\text{Mg}_2\text{P}_2\text{O}_7$
(iv)	Silver halide	(d) BaSO_4

27.

 [View Text Solution](#)

Column-I	Column-II
(i) Barium sulphate	(a) 1877 g
(ii) Magnesium pyrophosphate	(b) 235 g
(iii) Ammonium phoasphomolibladat	(c) 188 g
(iv) Silver chloride	(d) 222 g
(v) Silver bromide	(e) 143.5
(vi) Silver iodide	(f) 233 g

28.



[View Text Solution](#)

Section-B - State True or False For The Following Statements

- (i) Organic compound is first synthesised by F. Wohier

(ii) Berzeiius stated that some mysterious force existing in the living organism.

(iii) In 1882 Wohler prepared organic compound from inorganic compound at that time vital force they accepted.

(iv) Kolbe prepared methane and Berthelot prepared acetic acid

 [View Text Solution](#)

2. (i) There are huge no. of organic compound because carbon atom is very small.

(ii) No. of organic compound are huge because of catanation.

(iii) Organic compound are in huge no. because of valency.

 [View Text Solution](#)

3. (i) Molecular formula of Anisole: $C_6H_5OCH_3$

(ii) Acetone is a simple name of CH_2COCH_3

(iii) Molecular formula of benzene is C_6H_5

(iv) Formula of C_2H_6 is methane

(v) The formula of pentane and propane are C_3H_8 and C_5H_{12} receptivity

 [View Text Solution](#)

4. (i) Aceton is a Propanone and there is amide group in it.

(ii) Aceton is dimethyl ketone

(iii) Formula of acetone is CH_3COCH_3

(iv) Aceton possess carbonyl group

 [View Text Solution](#)

5. (i) Carbon possess sp^2 hybridisation in carbocation.

(ii) Carbon possess sp^3 hybridisation in carbocation.

(iii) Carbocation is formed by homolytic fission of bond

(iv) Carbocation are very stable

 [View Text Solution](#)

6. (i) $\overset{+}{CH_3}$ and $\overset{+}{CH_3CH_2}$ both are primary carbocation.

(ii) $(\overset{+}{CH_3})_3C$ is a tertiary carbocation and all carbon are sp^3

+

(iii) CH_3 is a trigonal planar

(iv) CH_4 is not a trigonal planar



[View Text Solution](#)

7. (i) Positive and negative ion are formed by homolytic cleavage of covalent bond.

(ii) Positive and negative ion formed by heterolytic cleavage of covalent bond.

(iii) Only homolytic cleavage is possible in $C - C - Cl$ bond of $CH_3 - Cl$

(iv) If the heterolytic cleavage of bond then there are ionic or polar types reaction occurs in it



[View Text Solution](#)

8. (i) Only carbocation form by homolytic cleavage of bond.

(ii) By heterolytic cleavage of bond, the carbocation or carbanion are formed.

(iii) The carbon of carbanion is sp^2 and carbon of carbocation is sp^3 .

(iv) Carbon of carbanion is sp^3 and carbon of carbocation is sp^2

 [View Text Solution](#)

9. (i) The stability of carbocation is explain by delocalised structure of hyperconjugation.

(ii) The stability of carbocation is explain by drawing the resonance structure.

(iii) Hyperconjugation effect is (+) or (-)

(iv) Mesomeric effect is (+) or (-)

 [View Text Solution](#)

10. (i) Aniline is become polar in its resonance structure.

(ii) The separation of charge occurs in the resonance structure of aniline.

(iii) The NH_2 group of aniline is a electron donating.

(iv) The NH_2 group of aniline is a electron attracting in resonance (-R)

 [View Text Solution](#)

11. The $-NO_2$ group in nitrobenzene:

- (i) In resonance act as a electron donating and in inductive effect it act as an electron attracting.
- (ii) It acts as an electron donating in resonance as well as inductive effect.
- (iii) It acts as an electron attractive in resonance as well as inductive effect.
- (iv) It acts as an electron attracting in resonance and electron donating in inductive effect

[View Text Solution](#)

12. (i) CH_3CH_2 is more stable than CH_3

(ii) CH_3CH_2 is less stable than CH_3

(iii) $(CH_3)_3C$ is less stable than CH_3

(iv) $(CH_3)_3C$ is more stable than CH_3

[View Text Solution](#)

13. (i) The stability is explain by resonance effect and hyperconjugation.

(ii) The resonance structure are drawn in resonance and hyperconjugation.

(iii) Hyperconjugation is a bondless resonance.

(iv) In resonance structure, there is movement of electron pair of only π bond



[View Text Solution](#)

14. (i) The volatile liquid is purify by the fractional distillation and simple distillation.

(ii) Two liiquids are separated by fractional distillation.

(iii) The difference of low boiling point containing liquids are separated by fractional distillation.

(iv) The difference of high boiling point containing liquids are separated by fractional distillation



[View Text Solution](#)

15. (i) The purification of solid is by crystallisation.

(ii) The crystallisation purify the solid and distillation is purify the solid.

(iii) The liquid is purify by sublimation.

(iv) To separate the mixture of ammonium chloride and sodium chloride, the distillation method is applied



[View Text Solution](#)

16. (i) The boiling point of chloroform and aniline are 334K and 457K respectively.

(iii) The vapour of chloroform is obtained after aniline in distillation.

(iv) Chloroform is more volatile than aniline



[View Text Solution](#)

17. In steam distillation:

(i) The liquid is boiled at low temperature.

- (ii) Vapour pressure of liquid $<$ Atmospheric pressure
- (iii) (liquid + pressure of water vapour)=1 atmosphere.
- (iv) The mixture of organic liquid are obtained.
- (v) The condensation of mixture of (vapour of water + vapour of liquid)

 [View Text Solution](#)

18. Steam distillation at low pressure:

- (i) In soap industry
- (ii) Water pump, vacuum pump, air pump are used.
- (iii) High boiling point containing liquid are not decompose.
- (iv) The liquid is decomposed.
- (v) The liquid is boiled at low temperature

 [View Text Solution](#)

19. The fractional distillation:

- (i) The freezing of vapour of liquid with high boiling point take place first.
- (ii) In column volatile liquid is more in vapour at higher level.

(iii) Condense liquid comes down and give heat to the vaporizing.

(iv) The liquid with highest boiling point reaches at the top of coloum

 [View Text Solution](#)

20. (i) The volume of N_2 is measured by nitrometer.

(ii) The weight of N_2 is measured by nitrometer.

(iii) The weight of NH_3 is measured by nitrometer.

(iv) The volume of NH_3 is measured by nitrometer.

 [View Text Solution](#)

21. (i) The estimation of sulphur is detect by weight of $BaSO_4$.

(ii) The $BaCl_2$ is added in estimation of sulphur

(iii) The carius tube is used in estimation of sulphur.

(iv) The magnesium mixture is added in estimation of sulphur

 [View Text Solution](#)

22. (i) Organic compound is first synthesised by F. Wohler

(ii) Berzeius stated that some mysterious force existing in the living organism.

(iii) In 1828 Wohler prepared organic compound from inorganic compound at that time vital force they accepted.

(iv) Kolbe prepared methane and Berthelot prepared acetic acid



[View Text Solution](#)

23. (i) There are huge no. of organic compound because carbon atom is very small.

(ii) No. of organic compound are huge because of catanation.

(iii) Organic compound are in huge no. because of valency.



[View Text Solution](#)

24. (i) Molecular formula of Anisole: $C_6H_5OCH_3$

(ii) Acetone is a simple name of CH_3COCH_3

(iii) Molecular formula of benzene is C_6H_6

(iv) Formula of C_2H_6 is ethane

(v) The formula of pentane and propane are C_5H_{12} and C_3H_8 respectively

 [View Text Solution](#)

25. (i) Acetone is a Propanone and there is a carbonyl group in it.

(ii) Acetone is dimethyl ketone

(iii) Formula of acetone is CH_3COCH_3

(iv) Acetone possesses a carbonyl group

 [View Text Solution](#)

26. (i) Carbon possesses sp^2 hybridisation in carbocation.

(ii) Carbon possesses sp^3 hybridisation in carbocation.

(iii) Carbocation is formed by homolytic fission of a bond

(iv) Carbocations are very stable

 [View Text Solution](#)

27. (i) $\overset{+}{\text{C}}\text{H}_3$ and $\overset{+}{\text{C}}\text{H}_3\text{C}\text{H}_2$ both are primary carbocation.

(ii) $(\overset{+}{\text{C}}\text{H}_3)_3$ is a tertiary carbocation and all carbon are sp^3

(iii) $\overset{+}{\text{C}}\text{H}_3$ is a trigonal planar

(iv) CH_4 is not a trigonal planar

 [View Text Solution](#)

28. (i) Positive and negative ion are formed by homolytic cleavage of covalent bond.

(ii) Positive and negative ion formed by heterolytic cleavage of covalent bond.

(iii) Only homolytic cleavage is possible in $\text{C} - \text{C} - \text{Cl}$ bond of $\text{C}\text{H}_3 - \text{Cl}$

(iv) If the heterolytic cleavage of bond then there are ionic or polar types reaction occurs in it

 [View Text Solution](#)

29. (i) Only carbocation form by homolytic cleavage of bond.

(ii) By heterolytic cleavage of bond, the carbocation or carbanion are formed.

(iii) The carbon of carbanion is sp^2 and carbon of carbocation is sp^3 .

(iv) Carbon of carbanion is sp^3 and carbon of carbocation is sp^2



[View Text Solution](#)

30. (i) The stability of carbocation is explain by delocalised structure of hyperconjugation.

(ii) The stability of carbocation is explain by drawing the resonance structure.

(iii) Hyperconjugation effect is (+) or (-)

(iv) Mesomeric effect is (+) or (-)



[View Text Solution](#)

31. (i) Aniline is become polar in its resonance structure.

(ii) The separation of charge occurs in the resonance structure of aniline.

(iii) The NH_2 group of aniline is a electron donating.

(iv) The NH_2 group of aniline is a electron attracting in resonance (-R)

 [View Text Solution](#)

32. The $-NO_2$ group in nitrobenzene:

(i) In resonance act as a electron donating and in inductive effect it act as an electron attracting.

(ii) It acts as an electron donating in resonance as well as inductive effect.

(iii) It acts as an electron attractive in resonance as well as inductive effect.

(iv) It acts as an electron attracting in resonance and electron donating in inductive effect

 [View Text Solution](#)

33. (i) $\overset{+}{\text{CH}_3}\overset{+}{\text{CH}_2}$ is more stable than $\overset{+}{\text{CH}_3}$

(ii) $\overset{+}{\text{CH}_3}\overset{+}{\text{CH}_2}$ is less stable than $\overset{+}{\text{CH}_3}$

(iii) $(\overset{+}{\text{CH}_3})_3\overset{+}{\text{C}}$ is less stable than $\overset{+}{\text{CH}_3}$

(iv) $(\overset{+}{\text{CH}_3})_3\overset{+}{\text{C}}$ is more stable than $\overset{+}{\text{CH}_3}$

 [View Text Solution](#)

34. (i) The stability is explain by resonance effect and hyperconjugation.

(ii) The resonance structure are drawn in resonance and hyperconjugation.

(iii) Hyperconjugation is a bondless resonance.

(iv) In resonance structure, there is movement of electron pair of only π bond

 [View Text Solution](#)

35. (i) The volatile liquid is purified by the fractional distillation and simple distillation.

(ii) Two liquids are separated by fractional distillation.

(iii) The difference of low boiling point containing liquids are separated by fractional distillation.

(iv) The difference of high boiling point containing liquids are separated by fractional distillation

 [View Text Solution](#)

36. (i) The purification of solid is by crystallisation.

(ii) The crystallisation purifies the solid and distillation purifies the liquid.

(iii) The liquid is purified by sublimation.

(iv) To separate the mixture of ammonium chloride and sodium chloride, the distillation method is applied

 [View Text Solution](#)

37. (i) The boiling point of chloroform and aniline are 334K and 457K respectively.

(iii) The vapour of chloroform is obtained after aniline in distillation.

(iv) Chloroform is more volatile than aniline

 [View Text Solution](#)

38. In steam distillation:

(i) The liquid is boiled at low temperature.

(ii) Vapour pressure of liquid $<$ Atmospheric pressure

(iii) (liquid + pressure of water vapour)=1 atmosphere.

(iv) The mixture of organic liquid are obtained.

(v) The condensation of mixture of (vapour of water + vapour of liquid)

 [View Text Solution](#)

39. Steam distillation at low pressure:

(i) In soap industry

- (ii) Water pump, vacuum pump, air pump are used.
- (iii) High boiling point containing liquid are not decompose.
- (iv) The liquid is decomposed.
- (v) The liquid is boiled at low temperature

 [View Text Solution](#)

40. The fractional distillation:

- (i) The freezing of vapour of liquid with high boiling point take place first.
- (ii) In coloum volatile liquid is more in vapour at higher level.
- (iii) Condense liquid comes down and give heat to the vaporizing.
- (iv) The liquid with highest boiling point reaches at the top of coloum

 [View Text Solution](#)

41. (i) The volume of N_2 is measured by nitrometer.

(ii) The weight of N_2 is measured by nitrometer.

(iii) The weight of NH_3 is measured by nitrometer.

(iv) The volume of NH_3 is measured by nitrometer.



[View Text Solution](#)

42. (i) The estimation of sulphur is detect by weight of $BaSO_4$.

(ii) The $BaCl_2$ is added in estimation of sulphur

(iii) The carius tube is used in estimation of sulphur.

(iv) The magnesium mixture is added in estimation of sulphur



[View Text Solution](#)

Section-B - Fill in the Blanks

1. Genetic information containing molecules is known as.....



[View Text Solution](#)

2. The formulas of ammonium cyanate and urea areandrespectively



[View Text Solution](#)

3. The hybridisation type of carbon respectively in methane, ethane, ethene and ethyne is,.....,, and

 [View Text Solution](#)

4. From sp^3 , sp^2 and sp hybrid orbital,is most andis least electronegative

 [View Text Solution](#)

5. Two isomer of butane are n-butane and iso butane..... is the relation of no. of σ and π bond in it.

 [View Text Solution](#)

6.in the structure of heterocyclic compound

 [View Text Solution](#)

 [View Text Solution](#)

7. Cyclohexene.....type and furan is.....type of compound

 [View Text Solution](#)

8.type of 3-D model indicate the atomic volume but it is not indicate.....

 [View Text Solution](#)

9.model indicate only bond in molecule

 [View Text Solution](#)

10. Only.... Model of molecule indicate both bond as well as atoms.

 [View Text Solution](#)

11. In nomenclature of cyclic compound..... prefix is written before the name of simple chain containing alkane.

 [View Text Solution](#)

12. The name of $C_{20}H_{42}$ and $C_{30}H_{62}$ is..... andrespectively

 [View Text Solution](#)

13. IUPAC name of $CH_3COCH_2CH_2CH_2COOH$ is.....

 [View Text Solution](#)

14. The formula of pent-4-en-2-ol is.....

 [View Text Solution](#)

15. The IUPAC name of



is.....and

Is main function group in it

[View Text Solution](#)

16. For $CH_3CHOHCH_2CH_2CH_2CHO$ the main group and second priority group is.....and

[View Text Solution](#)

17. The IUPAC name of CH_3COOCH_3 and $CH_3CH_2COOCH_3$ is..... andrespectively

[View Text Solution](#)

18.isomers of dibromobenzene

 [View Text Solution](#)

19.is IUPAC andcommon name of C_6H_5Ome respectively

 [View Text Solution](#)

20.is the structure of 1-chloro-2, 4-dinitrobenzene

 [View Text Solution](#)

21. Is the name of $C_6H_4Br_2$

 [View Text Solution](#)

22. andis the suffix of aldehyde and hydroxyl functional group



[View Text Solution](#)

23. - is form by hemolytic fission but - is form by heterolytic fission of C-Cl bond of $CH_3 - Cl$



[View Text Solution](#)

24. The fission of covalent bond is.....andtype



[View Text Solution](#)

25. In +E effect π electron from multiple bond migrate to the



[View Text Solution](#)

26. In -E effect π electron from multiple bond migrate to the



[View Text Solution](#)

27.andare increases the stability

 [View Text Solution](#)

28. inductive effect increase the acidic strength andinductive effect decreases the strength of $-COOH$

 [View Text Solution](#)

29. In formula and reaction the electron pair displacement is given by arrow and electron displacement is given by.....

 [View Text Solution](#)

30. There are more than..... Plates in columns of fractional distillation

 [View Text Solution](#)

31. The fractional distillation is used for separation ofdifference of boiling point containing liquid and simple distillation is used for separation ofdifference of boiling point containing liquid

 [View Text Solution](#)

32.technique is applied to separate different fraction of crude oil in petroleum

 [View Text Solution](#)

33. The steam distillation ofliquid is done and it is boiled at.....temperature

 [View Text Solution](#)

34.and..... used to reduce pressure in distillation under reduced pressure

 [View Text Solution](#)

35. In steam distillation the equation of total vapour pressure is $P = p_1 + p_2$ where p_1 is more than.....

 [View Text Solution](#)

36.apparatus is used in differential extraction

 [View Text Solution](#)

37. In differential extraction from two layer.....layer is above because.....

 [View Text Solution](#)

38. The organic solvent used in differential extraction is.....in water

 [View Text Solution](#)

39. Organic compound is..... soluble in organic solvent then continuous extraction technique is used

 [View Text Solution](#)

40.solution is added for produce the precipitate of halide for estimation of halogen

 [View Text Solution](#)

41.solution is added for produce the precipitate of $BaSO_4$ in estimation of sulphur.

 [View Text Solution](#)

42.andprecipitate will be produced by estimation of phosphorous

 [View Text Solution](#)

43. How many elements are estimated inorganic compounds?

 [View Text Solution](#)

44.gas produce in Duman method butgas produce in Kjeldahl's method

 [View Text Solution](#)

45.gas is produce in Kjeldahl's method and absorbed in

 [View Text Solution](#)

46. The excess H_2SO_4 is added in kjeldahl's method and then remaining H_2SO_4 is titrated with calculated.....

 [View Text Solution](#)

47. Genetic information containing molecules is known as....

 [View Text Solution](#)

48. The formulas of ammonium cyanate and urea areandrespectively

 [View Text Solution](#)

49. The hybridisation type of carbon respectively in methane, ethane, ethene and ethyne is,.....,, and

 [View Text Solution](#)

50. From sp^3 , sp^2 and sp hybrid orbital,is most andis least electronegative

 [View Text Solution](#)

51. Two isomer of butane are n-butane and iso butane..... is the relation of no. of σ and π bond in it.

 [View Text Solution](#)

52.in the structure of heterocyclic compound

 [View Text Solution](#)

53. Cyclohexene.....type and furan is.....type of compound

 [View Text Solution](#)

54.type of 3-D model indicate the atomic volume but it is not indicate.....

 [View Text Solution](#)

55.model indicate only bond in molecule

 [View Text Solution](#)

56. Only.... Model of molecule indicate both bond as well as atoms.

 [View Text Solution](#)

57. In nomenclature of cyclic compound..... prefix is written before the name of simple chain containing alkane.

 [View Text Solution](#)

58. The name of $C_{20}H_{42}$ and $C_{30}H_{62}$ is..... andrespectively

[View Text Solution](#)

59. IUPAC name of $CH_3COCH_2CH_2CH_2COOH$ is.....

[View Text Solution](#)

60. The formula of pent-4-en-2-ol is....

[View Text Solution](#)

61. The IUPAC name of



is.....and

Is main function group in it



[View Text Solution](#)

62. For $CH_3CHOHCH_2CH_2CH_2CH_2CHO$ the main group and second priority group is.....and



[View Text Solution](#)

63. The IUPAC name of CH_3COOCH_3 and $CH_3CH_2COOCH_3$ is..... andrespectively



[View Text Solution](#)

64.isomers of dibromobenzene



[View Text Solution](#)

65.is IUPAC andcommon name of C_6H_5Ome respectively

 [View Text Solution](#)

66.is the structure of 1-chloro-2-, 4-dinitrobenzene

 [View Text Solution](#)

67. Is the name of $C_6H_4Br_2$

 [View Text Solution](#)

68. andis the suffix of aldehyde and hydroxyl functional group

 [View Text Solution](#)

69. ^A - is form by hemolytic fission but ^B - is form by heterolytic fission of C-Cl bond of $CH_3 - Cl$

 [View Text Solution](#)

70. The fission of covalent bond is.....andtype

 [View Text Solution](#)

71. In +E effect π electron from multiple bond migrate to the

 [View Text Solution](#)

72. In -E effect π electron from multiple bond migrate to the

 [View Text Solution](#)

73.andare increases the stability

 [View Text Solution](#)

74. inductive effect increase the acidic strength andinductive effect decreases the strength of $-COOH$

 [View Text Solution](#)

75. In formula and reaction the electron pair displacement is given by arrow and electron displacement is given by.....

 [View Text Solution](#)

76. There are more than..... Plates in columns of fractional distillation

 [View Text Solution](#)

77. The fractional distillation is used for separation ofdifference of boiling point containing liquid and simple distillation is used for separation ofdifference of boiling point containing liquid



[View Text Solution](#)

78.technique is applied to separate different fraction of crude oil in petroleum



[View Text Solution](#)

79. The steam distillation ofliquid is done and it is boiled at.....temperature



[View Text Solution](#)

80.and..... used to reduce pressure in distillation under reduced pressure



[View Text Solution](#)

81. In steam distillation the equation of total vapour pressure is

$P = p_1 + p_2$ where p_1 is more than.....

 [View Text Solution](#)

82.apparatus is used in differential extraction

 [View Text Solution](#)

83. In differential extraction from two layer.....layer is above because.....

 [View Text Solution](#)

84. The organic solvent used in differential extraction is.....in water

 [View Text Solution](#)

85. Organic compound is..... soluble in organic solvent then continuous extraction technique is used

 [View Text Solution](#)

86.solution is added for produce the precipitate of halide for estimation of halogen

 [View Text Solution](#)

87.solution is added for produce the precipitate of $BaSO_4$ in estimation of sulphur.

 [View Text Solution](#)

88.andprecipitate will be produced by estimation of phosphorous

 [View Text Solution](#)

89. How many elements are estimated inorganic compounds?

 [View Text Solution](#)

90.gas produce in Duman method butgas produce in Kjeldahl's method

 [View Text Solution](#)

91.gas is produce in Kjeldahl's method and absorbed in

 [View Text Solution](#)

92. The excess H_2SO_4 is added in kjeldahl's method and then remaining H_2SO_4 is titrated with calculated.....

 [View Text Solution](#)

Section-B - Assertion and Reason Type Questions

1. Assertion (A): The fusion of organic compound with sodium metal for detection of element in organic compound

Reason (R): The N, X, S elements in organic compound is covered into ionic compound

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: A



[View Text Solution](#)

2. Assertion (A): Paper chromatography is a type of partition chromatography.

Reason (R): In it paper is as a stationary phase and solute is as a mobile phase

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B



[View Text Solution](#)

3. Assertion (A): In paper chromatography, the compound is identified on the basis of R_f value.

Reason (R): The R_f value of every compound is definite and constant

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: A



[View Text Solution](#)

4. Assertion (A): In column chromatography silica gel or alumina is filled in tube and compound is charged from upper side.

Reason (R): Proper liquid pass through column so by opening stop cock the components of mixture separated

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B



[View Text Solution](#)

5. Assertion (A): The purification of aniline is done by steam distillation

Reason (R): The distillation of aniline is not done

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: D



[View Text Solution](#)

6. Assertion (A): Pure aniline is not obtained by steam distillation in reality

Reason (R): Due to steam distillation mix of water and aniline obtained in flask

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)

- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

7. Assertion (A): In the resonance structure of aniline the NH_2 group donate electron pair of nitrogen to the benene ring

Reason (R): In aniline artho and para position of $-NH_2$ group possess negative charge

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)

C. Both Statement (A) and (R) are wrong

D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

8. Assertion (A): In the resonance structure of nitrobenzene, Nitro group accept the bonding electron pair π -bond from benzene

Reason (R): In the resonance structure of nitrobenzene negative charge is not present on ortho and para position

A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)

B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)

C. Both Statement (A) and (R) are wrong

D. Statement (A) is right but statement (R) is wrong

Answer: B



[View Text Solution](#)

9. Assertion (A): There are three hyperconjugation structure of ethyl cation $CH_3CH_2^+$.

Reason (R): Ethyl cation $CH_3CH_2^+$ is a carbocation

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B



[View Text Solution](#)

10. Assertion (A): Propene $CH_3CH = CH_2$ is a neutral molecule and it has three conjugate structures.

Reason (R): There is a C-H bond present in $CH = CH_2$ of propene

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B



[View Text Solution](#)

11. Assertion (A): The fusion of organic compound with sodium metal for detection of element in organic compound

Reason (R): The N, X, S elements in organic compound is covered into ionic compound

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: A



[View Text Solution](#)

12. Assertion (A): Paper chromatography is a type of partition chromatography.

Reason (R): In it paper is as a stationary phase and solute is as a mobile phase

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

13. Assertion (A): In paper chromatography, the compound is identify on the base of R_f value.

Reason (R): The R_f value of every compound is definate and constant

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)

- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: A

 [View Text Solution](#)

14. Assertion (A): In column chromatography silica gel or alumina is filled in tube and compound is charged from upper side.

Reason (R): Proper liquid pass through column so by opening stop cock the components of mixture separated

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)

C. Both Statement (A) and (R) are wrong

D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

15. Assertion (A): The purification of aniline is done by steam distillation

Reason (R): The distillation of aniline is not done

A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)

B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)

C. Both Statement (A) and (R) are wrong

D. Statement (A) is right but statement (R) is wrong

Answer: D

16. Assertion (A): Pure aniline is not obtained by steam distillation in reality

Reason (R): Due to steam distillation mix of water and aniline obtained in flask

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B

17. Assertion (A): In the resonance structure of aniline the NH_2 group donate electron pair of nitrogen to the benene ring

Reason (R): In aniline artho and para position of $-NH_2$ group possess negative charge

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B



[View Text Solution](#)

18. Assertion (A): In the resonance structure of nitrobenzene, Nitro group accept the bonding electron pair π -bond from benzene

Reason (R): In the resonance structure of nitrobenzene negative charge is not present on ortho and para position

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

19. Assertion (A): There are three hyperconjugation structure of ethyl cation $CH_3CH_2^+$.

Reason (R): Ethyl cation $CH_3CH_2^+$ is a carbocation

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)
- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

20. Assertion (A): Propene $CH_3CH = CH_2$ is a neutral molecule and it have three conjugate structures.

Reason (R): There C-H bond present in $CH = CH_2$ of propane

- A. Statement (A) and Reason (R) both are right. Statement (R) is correct explanation of statement (A)

- B. Statement (A) and Reason (R) both are right, but (R) is not correct explanation of statement (A)
- C. Both Statement (A) and (R) are wrong
- D. Statement (A) is right but statement (R) is wrong

Answer: B

 [View Text Solution](#)

Section -C (MCQs From Testual Exercise)

1. In the organic compound $CH_2 = CH - CH_2 - CH_2 - \equiv CH$, the pair of hybridised orbitals involved in the formation of $C_2 - C_3$ bond is

A. $sp - sp^2$

B. $sp - sp^3$

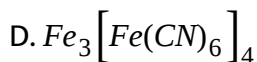
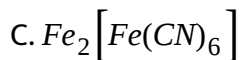
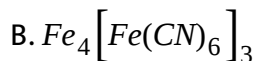
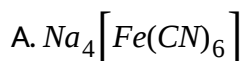
C. $sp^2 - sp^3$

D. $sp^3 - sp^3$

Answer: B

 [View Text Solution](#)

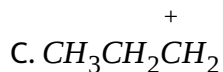
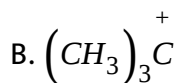
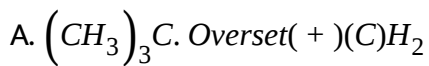
2. In the Lassaigne's test for nitrogen in an organic compound, the Prussian blue colour is obtained due to the formation of:



Answer: B

 [View Text Solution](#)

3. Which of the following carbocation is most stable?



Answer: B

 [View Text Solution](#)

4. The best and latest technique for isolation, purification and separation of organic compound is:

A. Crystallisation

B. Distillation

C. Sublimation

D. Chromatography

Answer: D



[View Text Solution](#)

5. The reaction : $CH_3CH_2I + KOH_{(aq)} \rightarrow CH_3CH_2OH + KI$ is classified as.....

A. electrophilic substitution

B. nucleophilic substitution

C. elimination

D. addition

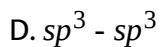
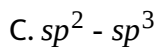
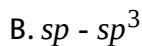
Answer: B



[View Text Solution](#)

6. In the organic compound $CH_2 = CH - CH_2 - CH_2 - \equiv CH$, the pair of hybridised orbitals involved in the formation of $C_2 - C_3$ bond is

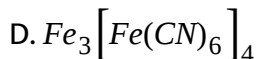
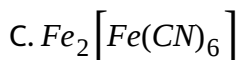
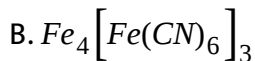
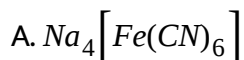
A. $sp - sp^2$



Answer: B

 [View Text Solution](#)

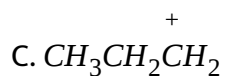
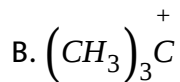
7. In the Lassaigne's test for nitrogen in an organic compound, the Prussian blue colour is obtained due to the formation of:



Answer: B

 [View Text Solution](#)

8. Which of the following carbocation is most stable?



Answer: B



[View Text Solution](#)

9. The best and latest technique for isolation, purification and separation of organic compound is:

A. Crystallisation

B. Distillation

C. Sublimation

D. Chromatography

Answer: D

 [View Text Solution](#)

10. The reaction : $CH_3CH_2I + KOH_{(aq)} \rightarrow CH_3CH_2OH + KI$ is classified as.....

- A. electrophilic substitution
- B. nucleophilic substitution
- C. elimination
- D. addition

Answer: B

 [View Text Solution](#)

1. How the functional group can be entered in organic compound?

A. Substitution of H in hydrocarbon

B. Substitution of C in hydrocarbon

C. Substitution of O in hydrocarbon

D. A and B both

Answer: A



[View Text Solution](#)

2. The hybridisation of carbon in alkane series is which type?

A. sp^2

B. sp^3

C. sp

D. dsp^2

Answer: B

 [View Text Solution](#)

3. The C-C and C-H bond length in ethane areandrespectively

A. 145pm and 112pm

B. 112 pm and 154 pm

C. 154 pm and 112pm

D. 112 pm and 145 pm

Answer: C

 [View Text Solution](#)

4. How many no. of σ and π bond are in ethene respectively?

A. 5 and 1

B. 1 and 5

C. 6 and 1

D. 4 and 2

Answer: A

 [View Text Solution](#)

5. The difference between C-C bond length of alkane and C=C bond length in alkene is.....

A. 30pm

B. 40 pm

C. 20 pm

D. 10pm

Answer: C

 [View Text Solution](#)

6. In IUPAC nomenclature method.....is used instead of lowest sum rule

- A. lowest subtraction rule
- B. lower substituted position
- C. lowest position
- D. none

Answer: B



[View Text Solution](#)

7. The correct order of reactivity of functional group is.....

- A. $=CO > -OH > -C \equiv N > -OR$
- B. $-COOH > -COOR > -CONH_2 > CHO$
- C. $-COOH > -NO_2 > C=O > -NH$
- D. $-C \equiv C - > -COOH - X > -COX$

Answer: B



View Text Solution

8. Two successive member of Alkane series differ from each other by a.....

Group

A. $-CHO$

B. $-C_2H$

C. $-CH_2$

D. CH_2CH_2

Answer: C



View Text Solution

9. What is the difference between alkyl group and alkane?

- A. One carbon is more in alkane
- B. One hydrogen is more in alkane
- C. One hydrogen is less in alkane
- D. One carbon is less in alkane

Answer: B

 [View Text Solution](#)

10. Which are the name of $(CH_3)_3C -$ and $(CH_3)_3CCH_2 -$ respectively?

- A. Tertiary butyl and ethyl
- B. Neopentyl and tertiarybutyl
- C. Tertiary butyl and neopentyl
- D. Ethyl and tertiary butyl

Answer: C

 [View Text Solution](#)

11. According to IUPAC nomenclature, which are the prefix of alcohol, aldehyde and ketones are respectively?

- A. Oxi, Oxo and keto
- B. Alcohol, formyl and keto
- C. Hydroxy, oxo and oxo
- D. Hydroxy, ol and one

Answer: C

 [View Text Solution](#)

12. IUPAC name of $CH \equiv C - CH = CH - CH = CH_2$ is.....

- A. Hexa-5-yne-1, 3-diene
- B. Hex-1, 3-diene-5-yne
- C. Hexa diene-yne 1, 3, 5

D. Hexa-1-ene-1-yne-3-en

Answer: B



[View Text Solution](#)

13.is formed by heterolytic fission

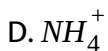
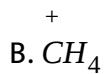
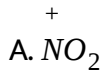
- A. Positive ion
- B. Negative ion
- C. free radical
- D. A and B both

Answer: D



[View Text Solution](#)

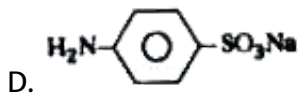
14. Which is the electrophile of the following ?



Answer: A

 [View Text Solution](#)

15. Which of the following compound is given red colour in Lassaigne's test?

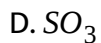
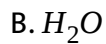


Answer: B::D



[View Text Solution](#)

16. Which of the following neutral molecule is not electrophile?



Answer: B



[View Text Solution](#)

17. Which of the following neutral molecule is not lewis base?

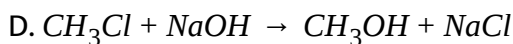
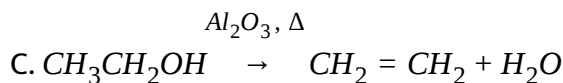
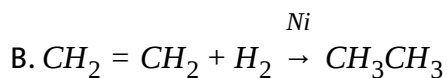
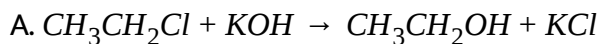


D. H_2O

Answer: C

 [View Text Solution](#)

18. Which of the following is elimination reaction?



Answer: C

 [View Text Solution](#)

19. Which is the hybridisation of 1, 2, 3 carbon in $CH_3 - C \equiv CH$?

A. sp^3 , sp^2 , sp

B. sp , sp , sp^3

C. sp^2 , sp^2 , sp^3

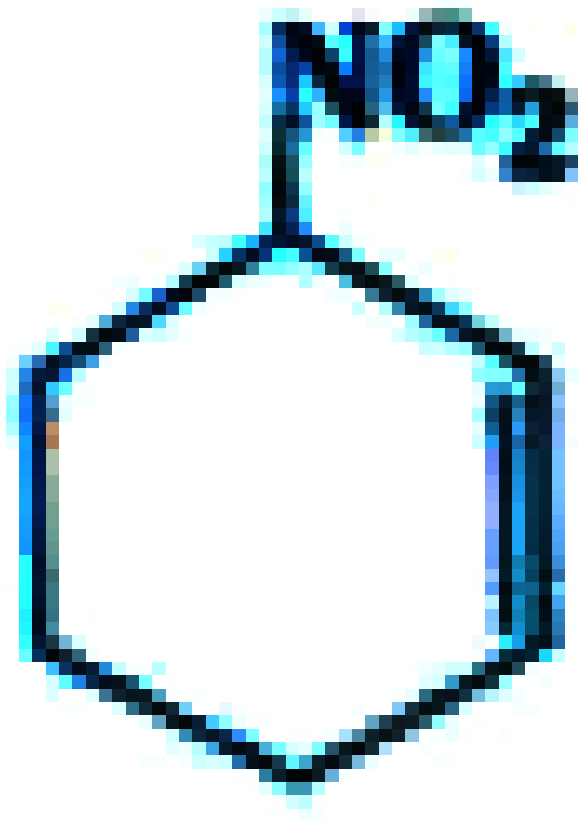
D. sp , sp^3 , sp^3

Answer: B



View Text Solution

20. Give correct IUPAC name of



- A. Cyclohex-1-ene-1-3-nitro
- B. 1-nitro-cyclohex-2-ene
- C. 3-nitro-cyclohexene

D. 1-ene-3-nitrocyclohexane

Answer: C

 [View Text Solution](#)

21. The reason of high no. of organic compound is.....

- A. Valency of carbon
- B. Small volume of carbon
- C. Catenation property of carbon
- D. Hybridisation in carbon

Answer: C

 [View Text Solution](#)

22. In which of the following bond the heterolytic fission is most easily?

A. $C - C$

B. $C - H$

C. $O - H$

D. $C - O$

Answer: C

 [View Text Solution](#)

23. Which is the shape of carbocation?

A. Planar

B. Tetrahedra

C. Linear

D. Cone shape

Answer: A

 [View Text Solution](#)

24. What is the common name of 2-butanone?

- A. Acetone
- B. Ethyl methyl ketone
- C. Dimethyl ketone
- D. Methyl ethyl ketone

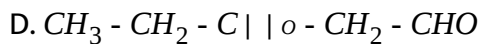
Answer: A::B



[View Text Solution](#)

25. Which of the following is amide group?

- A. $CH_3NHCH_2CH_3$
- B. $CH_3 - CH_2 - C \begin{array}{l} | \\ o \\ | \\ NH_2 \end{array}$
- C. $CH_3 - CH \begin{array}{l} | \\ NH_2 \end{array} - COOH$



Answer: B



[View Text Solution](#)

26. Which of the following is not cyclic compound?

A. Benzene

B. Napthalene

C. Neopentane

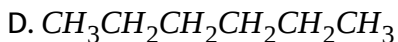
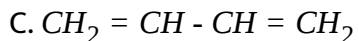
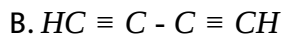
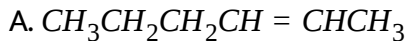
D. Aniline

Answer: C



[View Text Solution](#)

27. In which of the following the hybridisation of carbon is more than one?

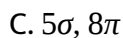
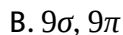
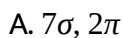
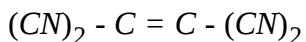


Answer: A



[View Text Solution](#)

28. How many no. of σ and π bond are in the following ?



D. $10\sigma, 1\pi$

Answer: B

 [View Text Solution](#)

29. Which group has higher priority order than CHO group?

A. Amide

B. Cyano

C. Carboxy

D. Keto

Answer: D

 [View Text Solution](#)

30. Which of the following is electron donor?

A. $-COOH$

B. $-NO_2$

C. $C_6H_5^-$

D. $(CH_3)_3C^-$

Answer: D

 [View Text Solution](#)

31. Which is the principle of paper chromatography?

A. Adsorption

B. Absorption

C. Solubility

D. Partition

Answer: D

 [View Text Solution](#)

32. The boiling point of glycerol is 563K. Before boiling point it is decomposed. So, which is the suitable technique for purification of it?

- A. Partial distillation
- B. Distillation
- C. Distillation under reduced pressure
- D. Steam distillation

Answer: C

 [View Text Solution](#)

33. There is N and S both are present in Lassaigne's extraction then what is the reason to form red colour?

- A. Ferric thiocyanate
- B. Ferricerocynide

C. Ferric cyanide

D. Ferrous chloride

Answer: A



[View Text Solution](#)

34. The estimation of N is done in Dumas method on the base of which gas?

A. O_2

B. N_2

C. NH_3

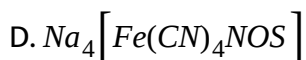
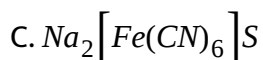
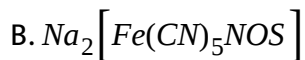
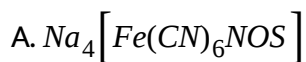
D. CO_2

Answer: B



[View Text Solution](#)

35. The purple colour of which compound is in Lassaigne's solution in sulphur test?



Answer: B



[View Text Solution](#)

36. The nitrogen is converted into which form in Kjeldahl's method?



Answer: A



[View Text Solution](#)

37. The purification of aniline is occurred by which technique?

A. Extraction by solvent

B. Steam distillation

C. Vaccum distillation

D. Fractional distillation

Answer: B



[View Text Solution](#)

38. Which of the following functional group is in $CH_3(CH_2)_2COCl$?

A. Aldehyde

B. Acly halide

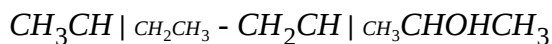
C. Carbonyl ketone

D. Ketone

Answer: B

 [View Text Solution](#)

39. How many carbons are present in parent chain



A. 5

B. 6

C. 7

D. 4

Answer: C

 [View Text Solution](#)

40. Give the IUPAC name of $CH_3 - CH |_{CH_3} - CH_2CH |_{CH_3} - CHOCHCH_3$

A. 2-hydroxy-3, 5-dimethylhexane

B. 3, 5-dimethylhexane-2-ol

C. 3, 5-dimethylhexane-2

D. 2, 4-dimethyl-hexane-5-ol

Answer: B



[View Text Solution](#)

41. IUPAC name of $CH_3CH_2COCH_2COCH_3$ is.....

A. 3, 5-diketohexane

B. Hexane-2, 4-dione

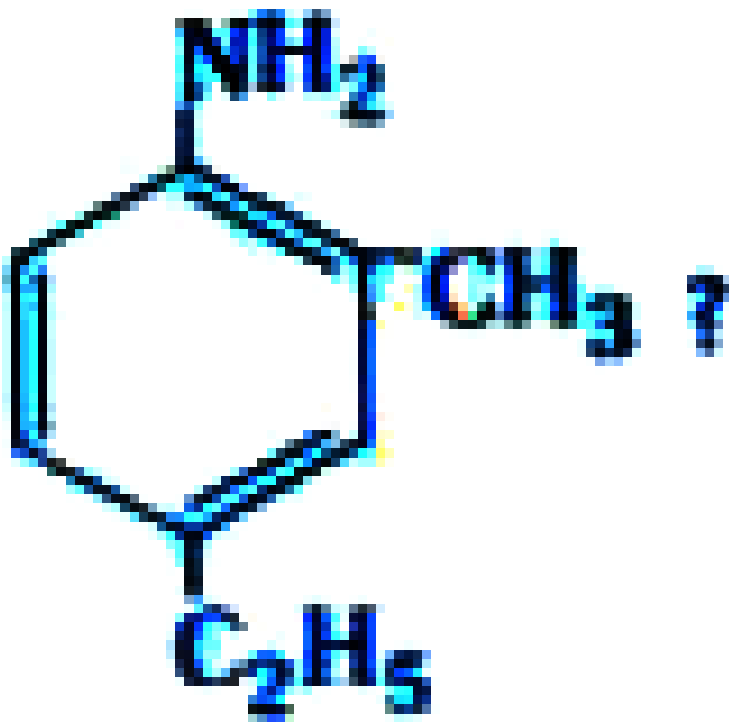
C. Hexane-3, 5-dione

D. Hexane-2, 4-ketone

Answer: B

[View Text Solution](#)

42. Which is the IUPAC name of



A. 4-ethyl-2-methylaniline

B. 4-amino-3-methylbenzene

C. 2-amino-5-ethyltoluene

D. 1-amino-4-ethyl-2-methylbenzene

Answer: A



[View Text Solution](#)

43. The hybridisation of carbon in methyl cation is.....

A. sp^3

B. sp^2

C. sp

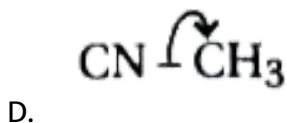
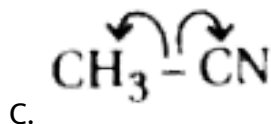
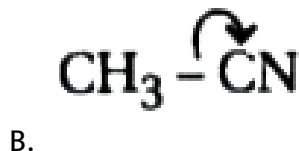
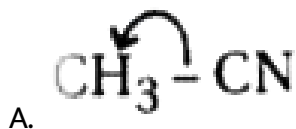
D. dsp^3

Answer: B



[View Text Solution](#)

44. Which is the correct representation of arrow in heterolytic fission of C-C bond in $CH_3 - CN$?

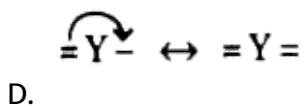
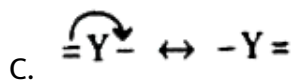
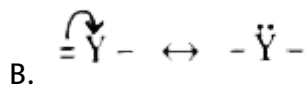
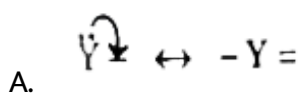


Answer: B



[View Text Solution](#)

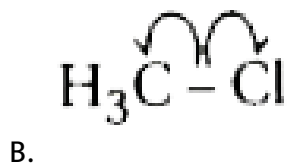
45. Which of the following transfer of electron pair from π bond to its adjacent bond?

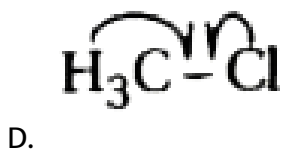
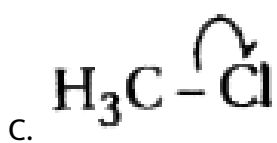


Answer: C

 [View Text Solution](#)

46. Which of the following indicate the correct homolytic fission?

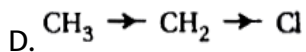
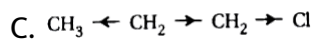
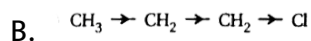
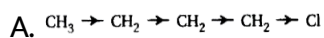




Answer: B

 [View Text Solution](#)

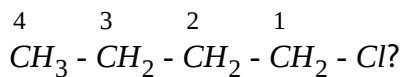
47.is the incorrect in the following for inductive effect?



Answer: C

 [View Text Solution](#)

48. The maximum inductive effect of $-Cl$ on which carbon in



A. 1

B. 2

C. 3

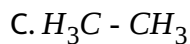
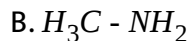
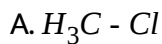
D. 4

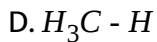
Answer: A



[View Text Solution](#)

49.bond is maximum polar in the following

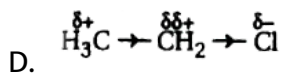
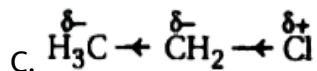
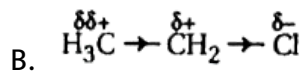
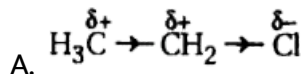




Answer: A

 [View Text Solution](#)

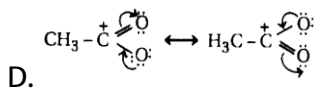
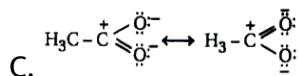
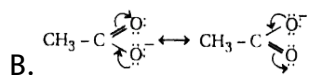
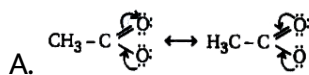
50. Which of the following is correct ?



Answer: B

 [View Text Solution](#)

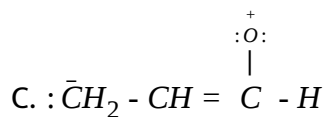
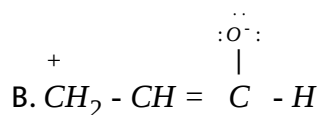
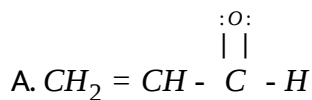
51. Which of the following is correct resonance structure of CH_3OO^- ?

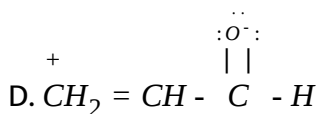


Answer: B

 [View Text Solution](#)

52. Which of the following is not a resonance structure of $\text{CH}_2 = \text{CH} - \text{CHO}$?





Answer: D

 [View Text Solution](#)

53. The bond length of two $N - O$ bond in nitromethane is.....

- A. It is a between of single bond $N-O$ and double bond $N=O$
- B. It is a single bond $N - O$ as well as double bond $N=O$
- C. It is a half of the summation of single bond $N - O$ and double bond $N=O$
- D. Both (A) and (C)

Answer: D

 [View Text Solution](#)

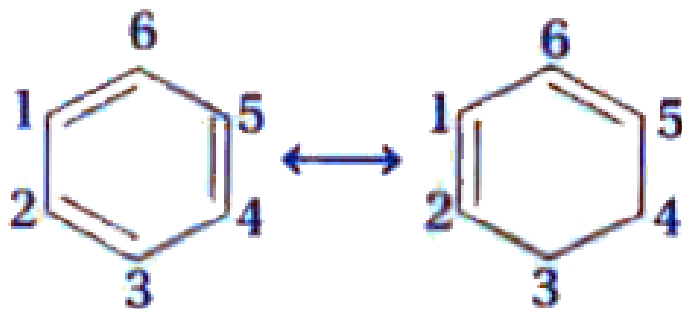
54. What is the bond length of C-C in benzene?

- A. 139pm
- B. 134pm
- C. 154pm
- D. A and C both

Answer: A

 [View Text Solution](#)

55. Which is the correct for structure (I) and (II) in benzene?



- A. Structure (I) is completely correct

- B. Structure (II) is completely correct
- C. Structure (I) and (II) are hypothetical
- D. Reality benzene does not contain (I) or (II) structure

Answer: C

 [View Text Solution](#)

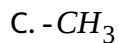
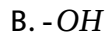
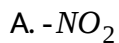
56. Which of the following containing the positive resonance effect ?

- A. $-NH_2$
- B. $-OH$
- C. $-NO_2$
- D. A and B both

Answer: D

 [View Text Solution](#)

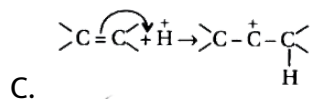
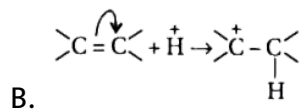
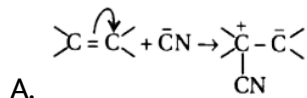
57. Which of the following containing negative resonance effect?



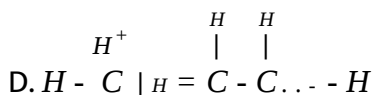
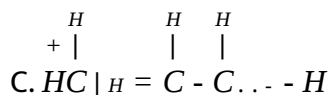
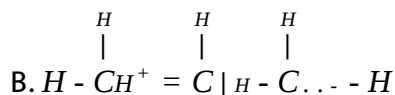
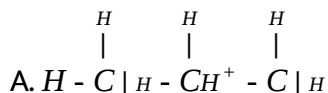
Answer: A

 View Text Solution

58. In which of the following the positive electromeric effect is present?



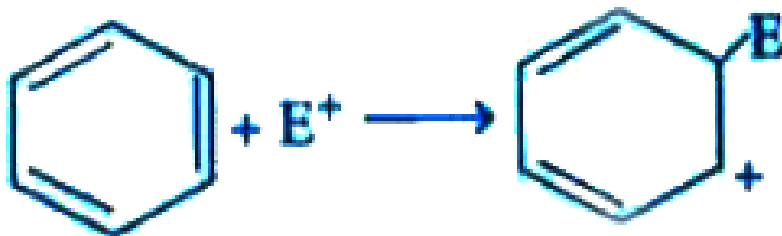
60. Which of the following is not hyperconjugate structure of propene?



Answer: A

 [View Text Solution](#)

61. The intermediate is produced in



which of the

following is correct for intermediate?

A. It is a free radical

B. It is carbocation

C. It is a carbanion

D. B and C

Answer: B

 [View Text Solution](#)

62. What is the IUPAC name of



A. 2, 3-dimethyl, 7-bromooctane

- B. 2-bromo-5, 6-dimethyloctane
- C. 2-bromo-6, 7-dimethyloctane
- D. 1-bromo-5, 6-dimethylheptane

Answer: C

 [View Text Solution](#)

63. What is the shape of methane molecule?

- A. Squareplaner
- B. Pyramidal
- C. Totrahedral
- D. Octahedral

Answer: C

 [View Text Solution](#)

64. Same functional group containing different organic compounds possesses.....chemical reaction

- A. not equal
- B. sam
- C. same and not same
- D. not decided

Answer: B



[View Text Solution](#)

65. Which is the IUPAC name of methyl propyl ether?

- A. Methoxypropane
- B. Methyl propoxy
- C. Propoxymethane
- D. Methoxy ethane

Answer: A



[View Text Solution](#)

66.physical property is changed by increase of molecular mass in homologous series

- A. Boiling point
- B. Melting point
- C. Density
- D. All

Answer: D



[View Text Solution](#)

67. Which type of isomerism is seen in 1-propanamine and 2-propanamine?

A. Functional group isomerism

B. Position isomerism

C. Chain isomerism

D. Optical isomerism

Answer: B

 [View Text Solution](#)

68. Mainly.....types of bond are present in organic compound

A. ionic

B. co-ordinat covalent

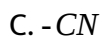
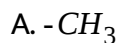
C. metallic

D. covalent

Answer: D

 [View Text Solution](#)

69. Which of the following group has less electron attracting capacity than hydrogen?

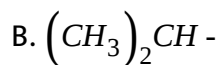
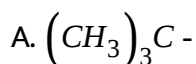


Answer: A



[View Text Solution](#)

70. Which of the following has least electron attraction capacity than hydrogen?



C. CH_3CH_2-

D. $-\text{CH}_3$

Answer: A

 [View Text Solution](#)

71. Which of the following has highest electron attraction capacity?

A. $-\text{CN}$

B. $-\text{Cl}$

C. $-\text{OH}$

D. $-\text{NO}_2$

Answer: D

 [View Text Solution](#)

72. Give the correct order of stability of carbocation

A. $3^\circ > 2^\circ > 1^\circ > \text{methyl}$

B. $\text{methyl} > 1^\circ > 2^\circ > 3^\circ$

C. $\text{methyl} > 3^\circ > 2^\circ > 1^\circ$

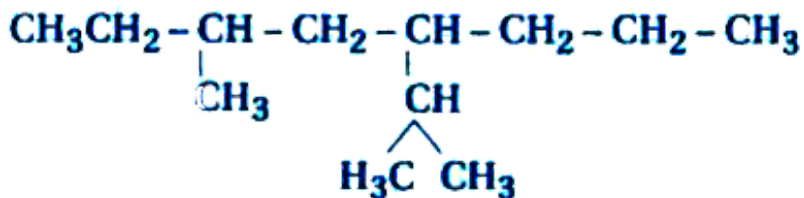
D. $1^\circ > 2^\circ > 3^\circ > \text{methyl}$

Answer: A



View Text Solution

73. The IUPAC name of



A. 4-isopropyl-6-methyl octane

B. 3-methyl-5-(1-methyl ethyl) octane

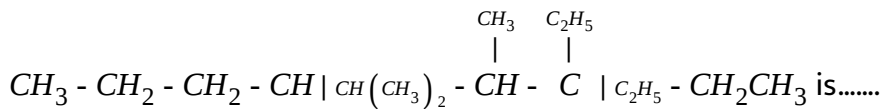
C. 3-methyl-5-isopropyloctane

D. 6-methyl-4-(1-methyl ethyl) octane

Answer: B::C

 [View Text Solution](#)

74. The IUPAC name of



A. 3, 3-diethyl-4-methyl-5-(1-methyl ethyl) octone

B. 3,3-diethyl-4-methyl-5-propyl octone

C. 3, 3-diethyl-5-methyl-4-(1-methyl ethyl) octone

D. 6, 6-diethyl-4-iso propyl-5-methyloctone

Answer: A

 [View Text Solution](#)

75. Give the IUPAC name of $\left[\left(\text{CH}_3 \right)_3 \text{C} \right]_4 \text{C}$

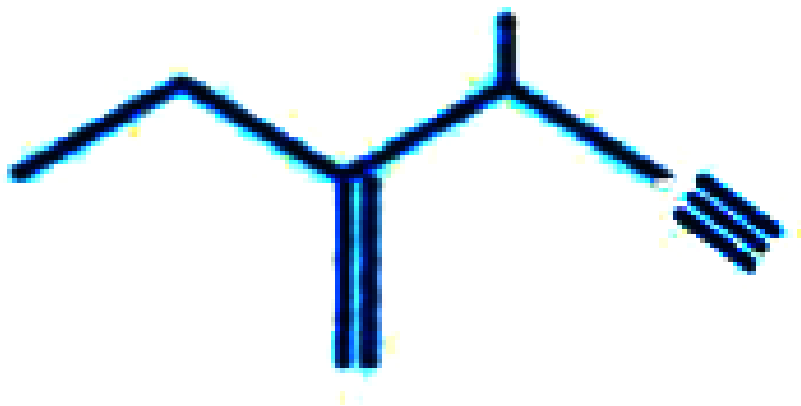
- A. Tetra neo butyl methane
- B. 3, 3-bis (1, 1-dimethylethyl) 2, 2, 4, 4-tetramethylpentane
- C. Tetra-tert-butylmethane
- D. None of these

Answer: B



[View Text Solution](#)

76. Give the IUPAC name of



- A. 4-ethyl-3-methylpene-4-en-1-yne
- B. 2-ethyl-3-methylpent-1-en-4-yne
- C. 4-ethyl-3-methylpent-1-yne-1-en
- D. 2-ethyl-3-methylpent-4-yne-1-en

Answer: B

 [View Text Solution](#)

77. Give the IUPAC name of



- A. 3-ethyl-4,4-dimethylhexane

B. 4-ethyl-5, 5-dimethyldecane

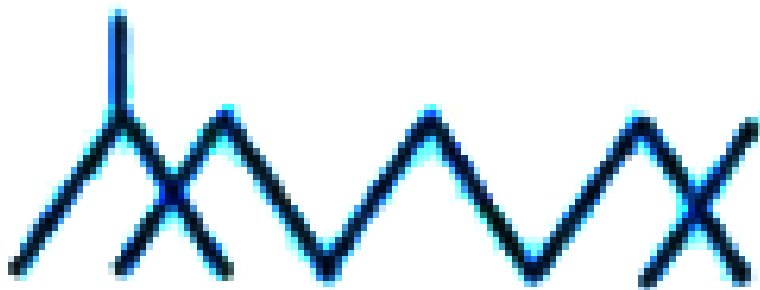
C. 5-ethyl-4, 4-dimethyloctane

D. 3-ethyl-4, 4-dimethylnonane

Answer: B

 [View Text Solution](#)

78. Give the IUPAC name of



A. 2, 2, 8, 8, 9-pentamethyldecane

B. 2-isopropyl, 2,8,8-trimethylhexane





C. 2, 3, 3, 7, 7-pentamethyloctane

D. 2, 2, 6, 6, 8-penta methylnonane

Answer: A

 [View Text Solution](#)

79. Match column-A and column-B

Column-A	Column-B
(i) 	(a) <i>n</i> -butane
(ii) 	(b) 2, 4-dimethyl pentane
(iii) 	(c) 2, 2-dimethyl ethane
(iv) 	(d) 3, 3-dimethyl pentane
	(e) 3, 3-diethyl pentane

A. (i-d), (ii-b), (iii-a), (iv-b)

B. (i-e), (ii-d), (iii-c), (iv-d)

C. (i-e), (ii-b), (iii-a), (iv-b)

D. (i-d), (ii-e), (iii-a), (iv-b)

Answer: C

 [View Text Solution](#)

80. Give the IUPAC name of $N \equiv C - CH_2 - CH |_{C \equiv N} - CH_2 - C \equiv N$

A. 3-cynopentane-1, 5-dinitrile

B. 1, 2, 4-tricynopropane

C. 1, 2, 3-tripropanenitrile

D. 3-cynopentane-1, 3-dinitrile

Answer: A

 [View Text Solution](#)

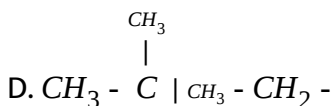
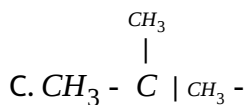
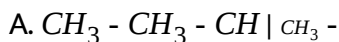
81. Give the IUPAC name of $CH_3 - CH |_{OCH_3} - C | |_{O - CH} |_{OCH_2CH_3} - CH_3$

- A. 4-methoxy-2-ethoxy-2-one
- B. 2-ethoxy-4-methoxypentane-2-one
- C. 4-methoxy-2-ethoxypentane-3-one
- D. 2-methoxy-4-ethoxypentane-3-one

Answer: D

 [View Text Solution](#)

82. Which is the structural formula of isobutyl group?



Answer: B



[View Text Solution](#)

83. 4-methyl-pent-2-yne has how many σ and π bond?

A. $15\sigma, 2\pi$

B. $12\sigma, 2\pi$

C. $13\sigma, 2\pi$

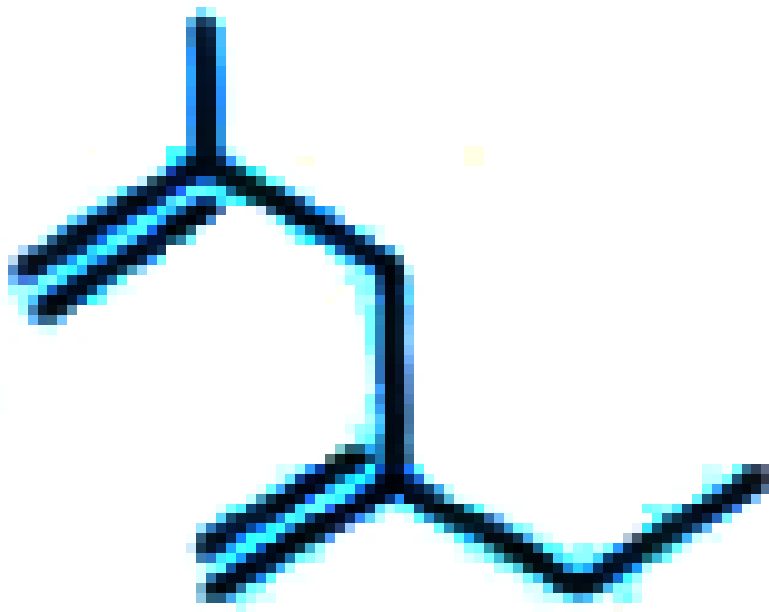
D. $14\sigma, 2\pi$

Answer: A



[View Text Solution](#)

84. The IUPAC name of



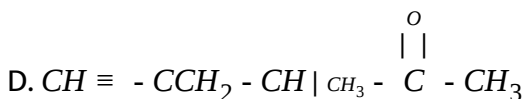
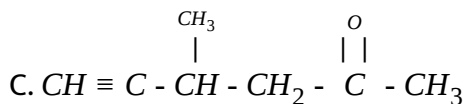
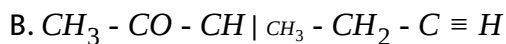
is

- A. 2-ethyl, hexa-1-ene
- B. 2-ethyl-4-methyl, pent-1-ene
- C. 2-methyl, -hex-1-ene
- D. 2-methyl-4-ethyl, oct-1-ene

Answer: B

[View Text Solution](#)

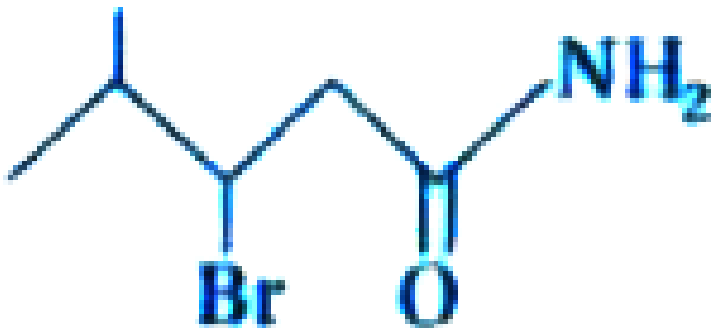
85. Which is the structural formula of 4-methyl hex-5-yne-2-one?



Answer: C

[View Text Solution](#)

86. The IUPAC name of



is.....

- A. 4-bromo-5-methyl-1-amino hex-2 one
- B. 3-bromo-4-methylpentamide
- C. 3-bromo, 2-methyl, 5-ketohexenamide
- D. 4-bromo, 5-methyl, 5-hexenamide

Answer: B

[View Text Solution](#)

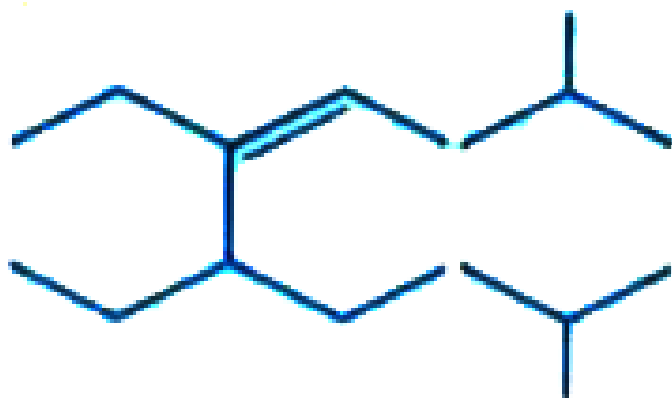
87. The IUPAC name of $CH_3 - C \begin{array}{l} | \\ | \\ | \end{array} O - CH_2 - C \begin{array}{l} CN \\ | \end{array} - CH_3 - CH_3$ is.....

- A. 2-cyno-2-methyl-4-oxopentane
- B. 4-cyno-4-methyl-2-pentanone
- C. 2, 2-dimethyl-4-one-butanenitrile
- D. 2, 2-dimethyl-4-one-pentanitrile

Answer: D

 [View Text Solution](#)

88. Give the IUPAC name of the following compound



- A. 5, 6-diethyl-2-9 -dimethyl-dec-4-ene
- B. 5, 6-butyl, 5-ethyl-3-methyl-oct-4-ene

C. 2, 4-diethyl-2, 8-dimethyl-non-4-ene

D. 5, 6 diethyl-2, 9-dimethyl-dec-6-ene

Answer: A



[View Text Solution](#)

89. Which is the prefix of ether in IUPAC nomenclature?

A. a L

B. oate

C. alcoxy

D. oyl

Answer: C



[View Text Solution](#)

90. What is +E effect?

- A. Transfer of electron takes place towards the attacking reagent
- B. Transfer of electrons takes place away from the attacking reagent
- C. Atoms having less electron attracting power than that of hydrogen
- D. Atoms having more electrons attracting power than that of hydrogen

Answer: A

 [View Text Solution](#)

91. Atoms or group of atoms having more electrons attracting power than that of hydrogen is known as.....

- A. +I effect
- B. -I effect
- C. +E effect

D. -Effect

Answer: B

 [View Text Solution](#)

92. How many carbons are there in the longest chain for IUPAC nomenclature of the molecule $CH_3 - CH_2 - CH(CH_2 - CH_2 - CH_3)_2$?

A. 4

B. 6

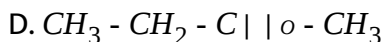
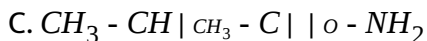
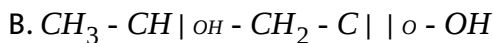
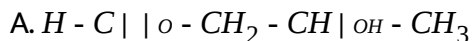
C. 7

D. 9

Answer: C

 [View Text Solution](#)

93. Which of the following is ketone compound?

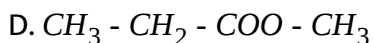
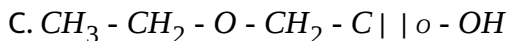
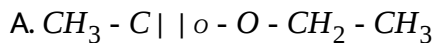


Answer: D



[View Text Solution](#)

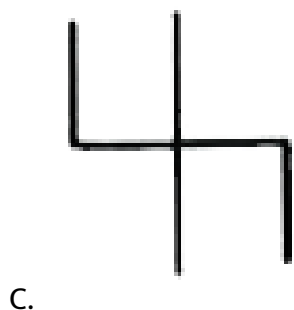
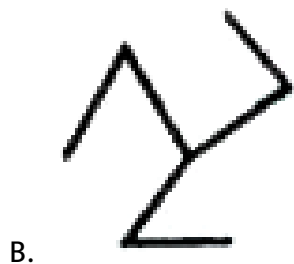
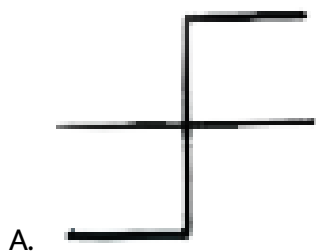
94. Which of the following is correct formula of ethyl acetate?



Answer: A

 [View Text Solution](#)

95. Which of the following is the structure of 3-ethyl pentane?



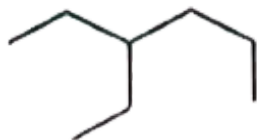


D.

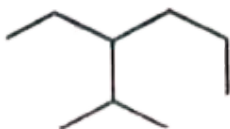
Answer: B

 [View Text Solution](#)

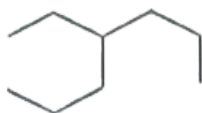
96. Which of the following molecules has maximum carbon atoms in the longest chain?



A.

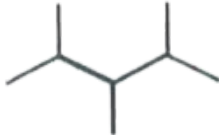


B.



C.

D.



Answer: C

 [View Text Solution](#)

97. Which of following is not correct IUPAC name?

A. $CH_3 - CH_2 - CH_2 - COO - CH_2 - CH_3$ Ethyl butanoate

B. $CH_3 - CH |_{CH_3} - CH_2 - CHO$ 3-Methyl butanal

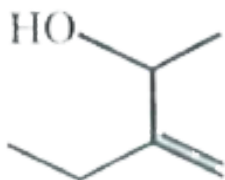
C. $CH_3 - CH |_{OH} - CH |_{CH_3} - CH_3$ 2-Methyl, 3-butanol

D. $CH_3 - CH |_{CH_3} - C |_{O} - CH_2 - CH_3$ 2-Methyl-3-pentanone

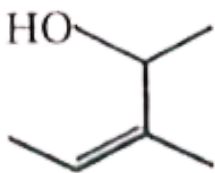
Answer: C

 [View Text Solution](#)

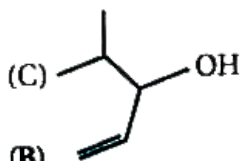
98. Which of the following is the formula of 3-methyl pent3-ene-2-ol



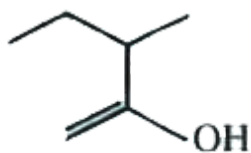
A.



B.



C.



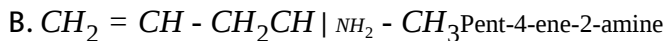
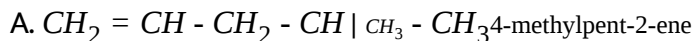
D.

Answer: B



View Text Solution

99. Which of the following IUPAC name of the molecule is not correct?



Answer: C



[View Text Solution](#)

100. Which of the following is correct matching of Column-I containing formulas and Column-II containing their names:

Column-I	Column-II
(i) $\text{CH}_3\text{COOCH}_3$	(a) Butane-1-amine
(ii) $\text{CH}_3\text{COCH}_2\text{CH}_3$	(b) But-2-one
(iii) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CHO}$	(c) Butanamide
(iv) $\text{CH}_3-\text{CH}(\text{OH})\text{CH}_3$	(d) Prop-2-ol
(v) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CONH}_2$	(e) Butanal
(vi) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{NH}_2$	(f) Methyl ethanoate

A. $i \rightarrow d, ii \rightarrow e, iii \rightarrow a, iv \rightarrow f, v \rightarrow c, vi \rightarrow b$

B. $i \rightarrow f, ii \rightarrow b, iii \rightarrow e, iv \rightarrow d, v \rightarrow c, vi \rightarrow a$

C. $i \rightarrow f, ii \rightarrow e, iii \rightarrow b, iv \rightarrow d, v \rightarrow a, vi \rightarrow c$

D. $i \rightarrow d, ii \rightarrow c, iii \rightarrow b, iv \rightarrow e, v \rightarrow a, vi \rightarrow f$





Answer: B



[View Text Solution](#)

101. Match the structure in column-I with their IUPAC names in column-II.

Which of the following pair is correct matching?

Column-I	Column-II
(P) 	(W) 2, 2 - Dimethyl propane
(Q) 	(X) 3, 3 - Dimethyl pentane
(R) 	(Y) <i>n</i> -Pentane
(S) 	(Z) 3, 3 - Diethyl pentane

A. $P \rightarrow Z, Q \rightarrow Y, R \rightarrow W, S \rightarrow X$

B. $P \rightarrow X, Q \rightarrow Z, R \rightarrow Y, S \rightarrow W$

C. $P \rightarrow W, Q \rightarrow X, R \rightarrow Z, S \rightarrow Y$

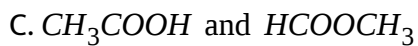
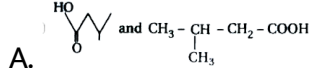
D. $P \rightarrow Y, Q \rightarrow W, R \rightarrow X, S \rightarrow Z$

Answer: B



[View Text Solution](#)

102. Which of the following pair of molecules has not same IUPAC name?



Answer: C

 [View Text Solution](#)

103. Which molecule has the longest carbon chain?

A. Isopentane

B. Neopentane

C. 2-methyl pentane

D. 2, 2-dimethyl butane

Answer: C

 [View Text Solution](#)

104. How the functional group can be entered in organic compound?

- A. Substitution of H in hydrocarbon
- B. Substitution of C in hydrocarbon
- C. Substitution of O in hydrocarbon
- D. A and B both

Answer: A



[View Text Solution](#)

105. The hybridisation of carbon in alkane series is which type?

- A. sp^2
- B. sp^3
- C. sp

D. dsp^2

Answer: B

 [View Text Solution](#)

106. The C-C and C-H bond length in ethane areandrespectively

A. 145pm and 112pm

B. 112 pm and 154 pm

C. 154 pm and 112pm

D. 112 pm and 145 pm

Answer: C

 [View Text Solution](#)

107. How many no. of σ and π bond are in ethene respectively?

A. 5 and 1

B. 1 and 5

C. 6 and 1

D. 4 and 2

Answer: A



[View Text Solution](#)

108. The difference between C-C bond length of alkane and C=C bond length in alkene is.....

A. 30pm

B. 40 pm

C. 20 pm

D. 10pm

Answer: C

 [View Text Solution](#)

109. In IUPAC nomenclature method.....is used instead of lowest sum rule

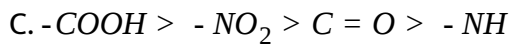
- A. lowest subtraction rule
- B. lower substituted position
- C. lowest position
- D. none

Answer: B

 [View Text Solution](#)

110. The correct order of reactivity of functional group is.....

- A. $=CO > -OH > -C \equiv N > -OR$
- B. $-COOH > -COOR > -CONH_2 > CHO$

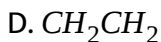
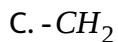
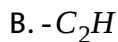
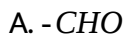


Answer: B

 [View Text Solution](#)

111. Two successive member of Alkane series differ from each other by a.....

Group



Answer: C

 [View Text Solution](#)

112. What is the difference between alkyl group and alkane?

- A. One carbon is more in alkane
- B. One hydrogen is more in alkane
- C. One hydrogen is less in alkane
- D. One carbon is less in alkane

Answer: B

 [View Text Solution](#)

113. Which are the name of $(CH_3)_3C -$ and $(CH_3)_3CCH_2 -$ respectively?

- A. Tertiary butyl and ethyl
- B. Neopentyl and tertiarybutyl
- C. Tertiary butyl and neopentyl
- D. Ethyl and tertiary butyl

Answer: C



[View Text Solution](#)

114. According to IUPAC nomenclature, which are the prefix of alcohol, aldehyde and ketones are respectively?

- A. Oxi, Oxo and keto
- B. Alcohol, formyl and keto
- C. Hydroxy, oxo and oxo
- D. Hydroxy, ol and one

Answer: C



[View Text Solution](#)

115. IUPAC name of $CH \equiv C - CH = CH - CH = CH_2$ is.....

- A. Hexa-5-yne-1, 3-dine
- B. Hexz-1, 3-dine-5-yne
- C. Hexa dine-yne 1, 3, 5
- D. Hexa-1-ene-1-yne-3-en

Answer: B

 [View Text Solution](#)

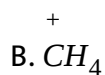
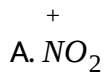
116.is formed by heterolytic fission

- A. Positive ion
- B. Negative ion
- C. free radial
- D. A and B both

Answer: D

 [View Text Solution](#)

117. Which is the electrophile of the following ?



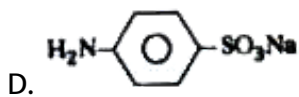
Answer: A



[View Text Solution](#)

118. Which of the following compound is given red colour in Lassaigne's test?

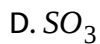
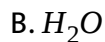
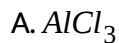




Answer: B::D

 [View Text Solution](#)

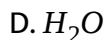
119. Which of the following neutral molecule is not electrophile?



Answer: B

 [View Text Solution](#)

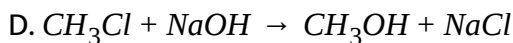
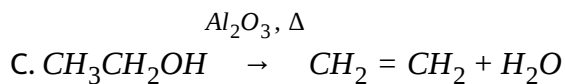
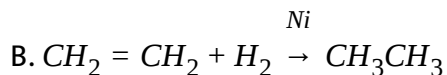
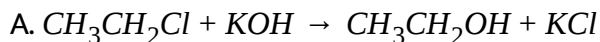
120. Which of the following neutral molecule is not lewis base?



Answer: C

 [View Text Solution](#)

121. Which of the following is elimination reaction?



Answer: C

 [View Text Solution](#)

122. Which is the hybridisation of 1, 2, 3 carbon in $\overset{3}{\text{CH}_3} - \overset{2}{\text{C}} \equiv \overset{1}{\text{CH}}$?

A. sp^3, sp^2, sp

B. sp, sp, sp^3

C. sp^2, sp^2, sp^3

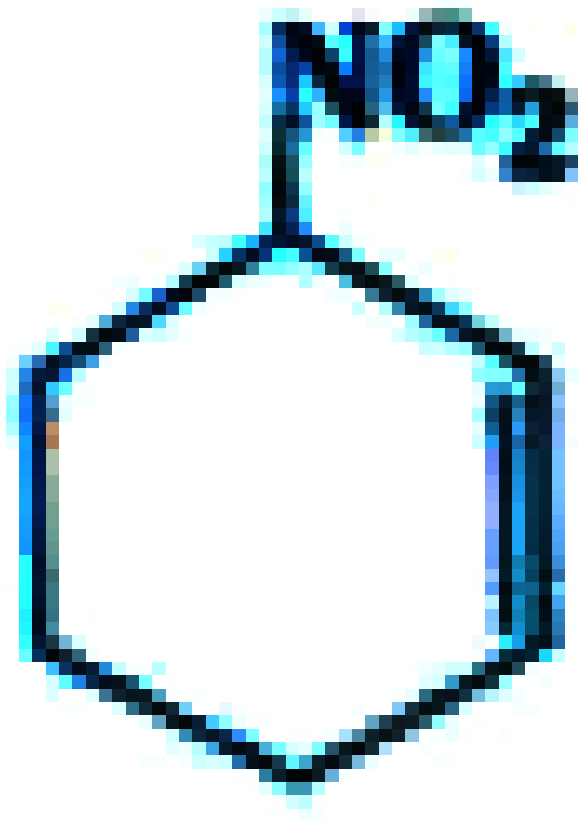
D. sp, sp^3, sp^3

Answer: B



[View Text Solution](#)

123. Give correct IUPAC name of



- A. Cyclohex-1-ene-1-3-nitro
- B. 1-nitro-cyclohex-2-ene
- C. 3-nitro-cyclohexene

D. 1-ene-3-nitrocyclohexane

Answer: C

 [View Text Solution](#)

124. The reason of high no. of organic compound is.....

- A. Valency of carbon
- B. Small volume of carbon
- C. Catenation property of carbon
- D. Hybridisation in carbon

Answer: C

 [View Text Solution](#)

125. In which of the following bond the heterolytic fission is most easily?

A. $C - C$

B. $C - H$

C. $O - H$

D. $C - O$

Answer: C



[View Text Solution](#)

126. Which is the shape of carbocation?

A. Planar

B. Tetrahedra

C. Linear

D. Cone shape

Answer: A



[View Text Solution](#)

127. What is the common name of 2-butanone?

- A. Acetone
- B. Ethyl methyl ketone
- C. Dimethyl ketone
- D. Methyl ethyl ketone

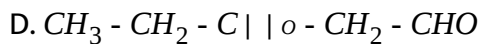
Answer: A::B



[View Text Solution](#)

128. Which of the following is amide group?

- A. $CH_3NHCH_2CH_3$
- B. $CH_3 - CH_2 - C \begin{array}{l} | \\ o - NH_2 \end{array}$
- C. $CH_3 - CH \begin{array}{l} | \\ NH_2 \end{array} - COOH$



Answer: B



[View Text Solution](#)

129. Which of the following is not cyclic compound?

A. Benzene

B. Napthalene

C. Neopentane

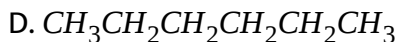
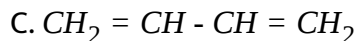
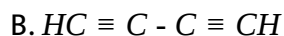
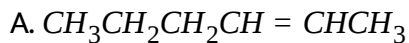
D. Aniline

Answer: C



[View Text Solution](#)

130. In which of the following the hybridisation of carbon is more than one?

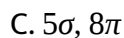
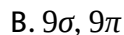
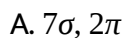
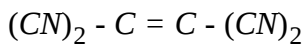


Answer: A



[View Text Solution](#)

131. How many no. of σ and π bond are in the following ?



D. $10\sigma, 1\pi$

Answer: B

 [View Text Solution](#)

132. Which group has higher priority order than CHO group?

- A. Amide
- B. Cyno
- C. Carboxy
- D. Keto

Answer: D

 [View Text Solution](#)

133. Which of the following is electron donor?

A. $-COOH$

B. $-NO_2$

C. $C_6H_5^-$

D. $(CH_3)_3C^-$

Answer: D

 [View Text Solution](#)

134. Which is the principle of paper chromatography?

A. Adsorption

B. Absorption

C. Solubility

D. Partition

Answer: D

 [View Text Solution](#)

135. The boiling point of glycerol is 563K. Before boiling point it is decomposed. So, which is the suitable technique for purification of it?

- A. Partial distillation
- B. Distillation
- C. Distillation under reduced pressure
- D. Steam distillation

Answer: C



View Text Solution

136. There is N and S both are present in Lassaigne's extraction then what is the reason to form red colour?

- A. Ferric thiocyanate
- B. Ferricerocynide

C. Ferric cyanide

D. Ferrous chloride

Answer: A



[View Text Solution](#)

137. The estimation of N is done in Dumas method on the base of which gas?

A. O_2

B. N_2

C. NH_3

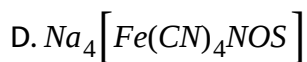
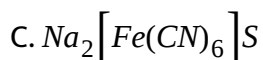
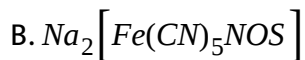
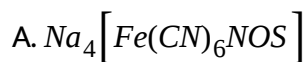
D. CO_2

Answer: B



[View Text Solution](#)

138. The purple colour of which compound is in Lassaigne's solution in sulphur test?



Answer: B



[View Text Solution](#)

139. The nitrogen is converted into which form in Kjeldahl's method?



Answer: A



[View Text Solution](#)

140. The purification of aniline is occurred by which technique?

A. Extraction by solvent

B. Steam distillation

C. Vaccum distillation

D. Fractional distillation

Answer: B



[View Text Solution](#)

141. Which of the following functional group is in $CH_3(CH_2)_2COCl$?

A. Aldehyde

B. Acly halide

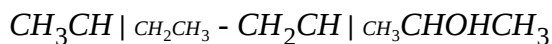
C. Carbonyl ketone

D. Ketone

Answer: B

 [View Text Solution](#)

142. How many carbons are present in parent chain



A. 5

B. 6

C. 7

D. 4

Answer: C

 [View Text Solution](#)

143. Give the IUPAC name of $CH_3 - CH |_{CH_3} - CH_2CH |_{CH_3} - CHOCHCH_3$

A. 2-hydroxy-3, 5-dimethylhexane

B. 3, 5-dimethylhexane-2-ol

C. 3, 5-dimethylhexane-2

D. 2, 4-dimethyl-hexane-5-ol

Answer: B



[View Text Solution](#)

144. IUPAC name of $CH_3CH_2COCH_2COCH_3$ is.....

A. 3, 5-diketohexane

B. Hexane-2, 4-dione

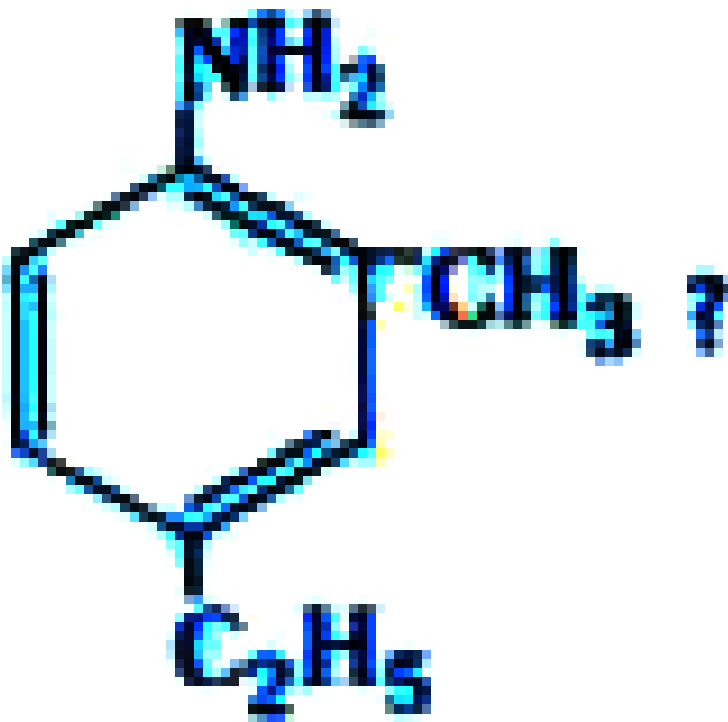
C. Hexane-3, 5-dione

D. Hexane-2, 4-ketone

Answer: B

[View Text Solution](#)

145. Which is the IUPAC name of



A. 4-ethyl-2-methylaniline

B. 4-amino-3-methylbenzene

C. 2-amino-5-ethyltoluene

D. 1-amino-4-ethyl-2-methylbenzene

Answer: A

 [View Text Solution](#)

146. The hybridisation of carbon in methyl cation is.....

A. sp^3

B. sp^2

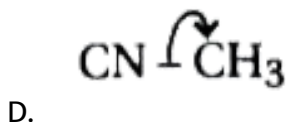
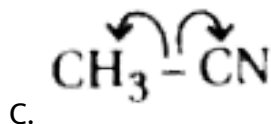
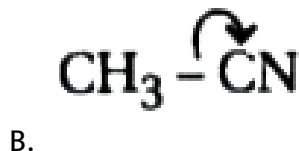
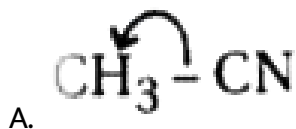
C. sp

D. dsp^3

Answer: B

 [View Text Solution](#)

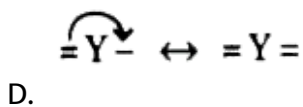
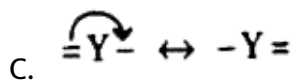
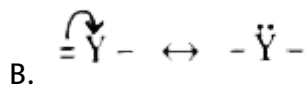
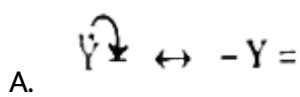
147. Which is the correct representation of arrow in heterolytic fission of C-C bond in $CH_3 - CN$?



Answer: B

 [View Text Solution](#)

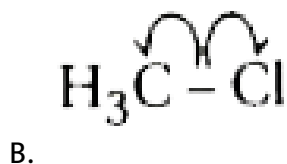
148. Which of the following transfer of electron pair from π bond to its adjacent bond?

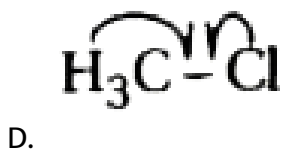
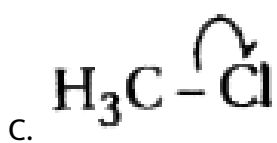


Answer: C

 [View Text Solution](#)

149. Which of the following indicate the correct homolytic fission?

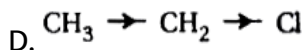
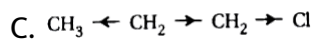
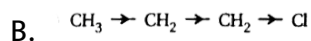
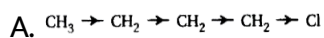




Answer: B

 [View Text Solution](#)

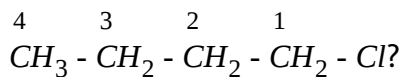
150.is the incorrect in the following for inductive effect?



Answer: C

 [View Text Solution](#)

151. The maximum inductive effect of $-Cl$ on which carbon in



A. 1

B. 2

C. 3

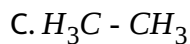
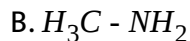
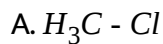
D. 4

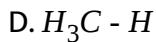
Answer: A



[View Text Solution](#)

152.bond is maximum polar in the following

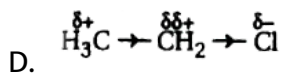
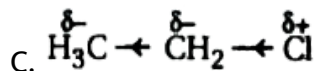
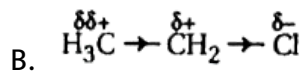
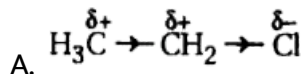




Answer: A

 [View Text Solution](#)

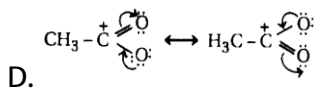
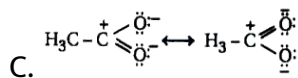
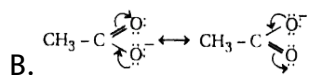
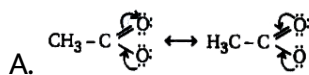
153. Which of the following is correct ?



Answer: B

 [View Text Solution](#)

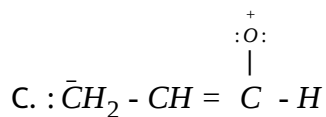
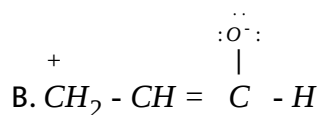
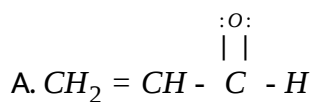
154. Which of the following is correct resonance structure of CH_3OO^- ?

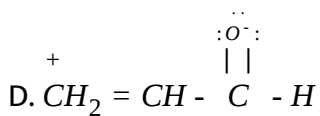


Answer: B

 [View Text Solution](#)

155. Which of the following is not a resonance structure of $\text{CH}_2 = \text{CH} - \text{CHO}$?





Answer: D

 [View Text Solution](#)

156. The bond length of two $N - O$ bond in nitromethane is.....

- A. It is a between of single bond $N-O$ and double bond $N=O$
- B. It is a single bond $N - O$ as well as double bond $N=O$
- C. It is a half of the summation of single bond $N - O$ and double bond $N=O$
- D. Both (A) and (C)

Answer: D

 [View Text Solution](#)

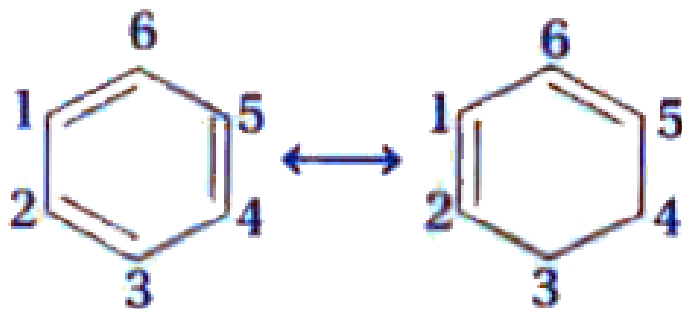
157. What is the bond length of C-C in benzene?

- A. 139pm
- B. 134pm
- C. 154pm
- D. A and C both

Answer: A

 [View Text Solution](#)

158. Which is the correct for structure (I) and (II) in benzene?



- A. Structure (I) is completely correct

- B. Structure (II) is completely correct
- C. Structure (I) and (II) are hypothetical
- D. Reality benzene does not contain (I) or (II) structure

Answer: C

 [View Text Solution](#)

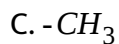
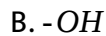
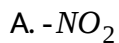
159. Which of the following containing the positive resonance effect ?

- A. $-NH_2$
- B. $-OH$
- C. $-NO_2$
- D. A and B both

Answer: D

 [View Text Solution](#)

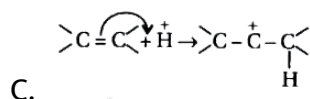
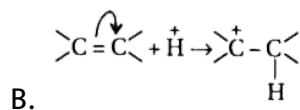
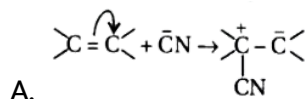
160. Which of the following containing negative resonance effect?



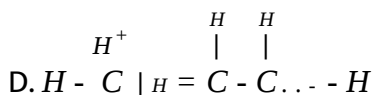
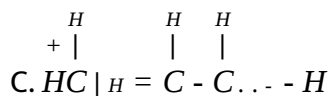
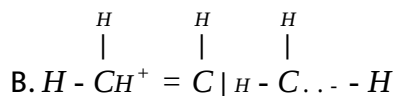
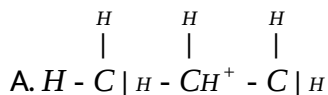
Answer: A

 View Text Solution

161. In which of the following the positive electromeric effect is present?



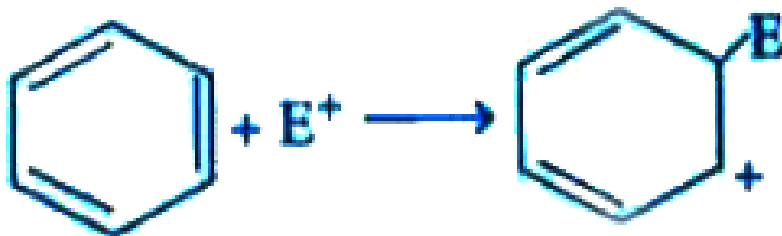
163. Which of the following is not hyperconjugate structure of propene?



Answer: A

 [View Text Solution](#)

164. The intermediate is produced in



which of the

following is correct for intermediate?

A. It is a free radical

B. It is carbocation

C. It is a carbanion

D. B and C

Answer: B

 [View Text Solution](#)

165. What is the IUPAC name of



A. 2, 3-dimethyl, 7-bromooctane

- B. 2-bromo-5, 6-dimethyloctane
- C. 2-bromo-6, 7-dimethyloctane
- D. 1-bromo-5, 6-dimethylheptane

Answer: C

 [View Text Solution](#)

166. What is the shape of methane molecule?

- A. Squareplaner
- B. Pyramidal
- C. Totrahedral
- D. Octahedral

Answer: C

 [View Text Solution](#)

167. Same functional group containing different organic compounds possesses.....chemical reaction

- A. not equal
- B. sam
- C. same and not same
- D. not decided

Answer: B



[View Text Solution](#)

168. Which is the IUPAC name of methyl propyl ether?

- A. Methoxypropane
- B. Methyl propoxy
- C. Propoxymethane
- D. Methoxy ethane

Answer: A



[View Text Solution](#)

169.physical property is changed by increase of molecular mass in homologous series

- A. Boiling point
- B. Melting point
- C. Density
- D. All

Answer: D



[View Text Solution](#)

170. Which type of isomerism is seen in 1-propanamine and 2-propanamine?

A. Functional group isomerism

B. Position isomerism

C. Chain isomerism

D. Optical isomerism

Answer: B

 [View Text Solution](#)

171. Mainly.....types of bond are present in organic compound

A. ionic

B. co-ordinat covalent

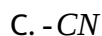
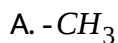
C. metallic

D. covalent

Answer: D

 [View Text Solution](#)

172. Which of the following group has less electron attracting capacity than hydrogen?

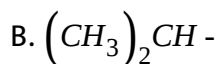
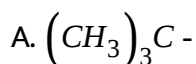


Answer: A



[View Text Solution](#)

173. Which of the following has least electron attraction capacity than hydrogen?



C. CH_3CH_2-

D. $-\text{CH}_3$

Answer: A

 [View Text Solution](#)

174. Which of the following has highest electron attraction capacity?

A. $-\text{CN}$

B. $-\text{Cl}$

C. $-\text{OH}$

D. $-\text{NO}_2$

Answer: D

 [View Text Solution](#)

175. Give the correct order of stability of carbocation

A. $3^\circ > 2^\circ > 1^\circ > \text{methyl}$

B. $\text{methyl} > 1^\circ > 2^\circ > 3^\circ$

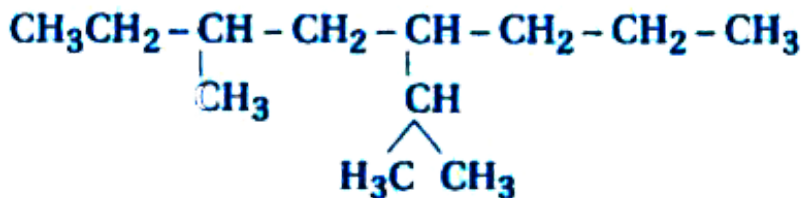
C. $\text{methyl} > 3^\circ > 2^\circ > 1^\circ$

D. $1^\circ > 2^\circ > 3^\circ > \text{methyl}$

Answer: A

 [View Text Solution](#)

176. The IUPAC name of



A. 4-isopropyl-6-methyl octane

B. 3-methyl-5-(1-methyl ethyl) octane

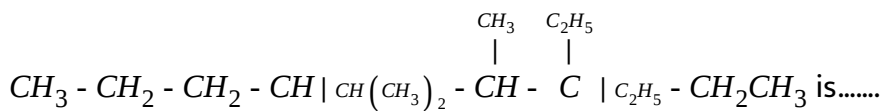
C. 3-methyl-5-isopropyloctane

D. 6-methyl-4-(1-methyl ethyl) octane

Answer: B::C

 [View Text Solution](#)

177. The IUPAC name of



A. 3, 3-diethyl-4-methyl-5-(1-methyl ethyl) octone

B. 3,3-diethyl-4-methyl-5-propyl octone

C. 3, 3-diethyl-5-methyl-4-(1-methyl ethyl) octone

D. 6, 6-diethyl-4-iso propyl-5-methyloctone

Answer: A

 [View Text Solution](#)

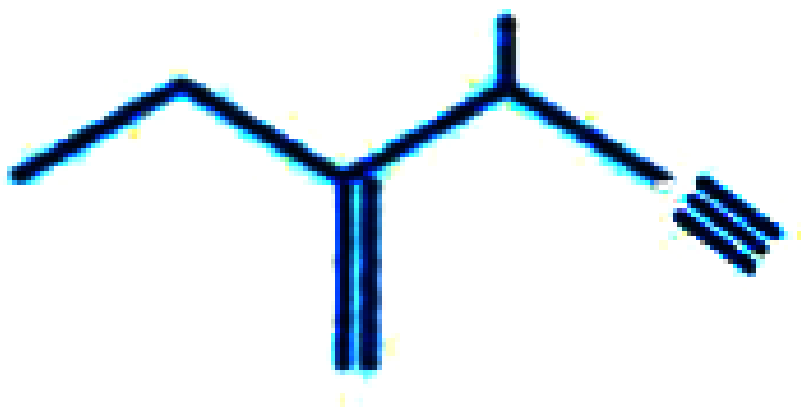
178. Give the IUPAC name of $\left[\left(\text{CH}_3 \right)_3 \text{C} \right]_4 \text{C}$

- A. Tetra neo butyl methane
- B. 3, 3-bis (1, 1-dimethylethyl) 2, 2, 4, 4-tetramethylpentane
- C. Tetra-tert-butylmethane
- D. None of these

Answer: B

 [View Text Solution](#)

179. Give the IUPAC name of



- A. 4-ethyl-3-methylpene-4-en-1-yne
- B. 2-ethyl-3-methylpent-1-en-4-yne
- C. 4-ethyl-3-methylpent-1-yne-1-en
- D. 2-ethyl-3-methylpent-4-yne-1-en

Answer: B

 [View Text Solution](#)

180. Give the IUPAC name of



- A. 3-ethyl-4,4-dimethylhexane

B. 4-ethyl-5, 5-dimethyldecane

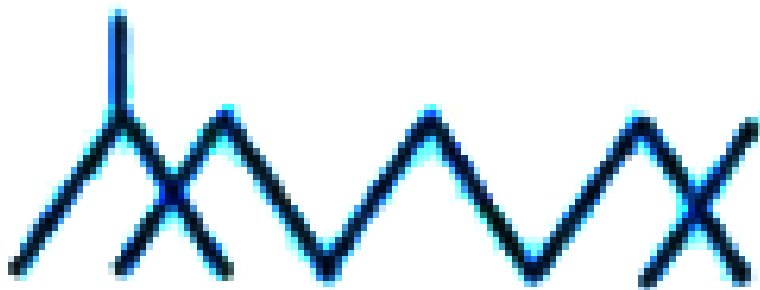
C. 5-ethyl-4, 4-dimethyloctane

D. 3-ethyl-4, 4-dimethylnonane

Answer: B

 [View Text Solution](#)

181. Give the IUPAC name of



A. 2, 2, 8, 8, 9-pentamethyldecane

B. 2-isopropyl, 2,8,8-trimethylhexane





C. 2, 3, 3, 7, 7-pentamethyloctane

D. 2, 2, 6, 6, 8-penta methylnonane

Answer: A

 [View Text Solution](#)

182. Match column-A and column-B

Column-A	Column-B
(i) 	(a) <i>n</i> -butane
(ii) 	(b) 2, 4-dimethyl pentene
(iii) 	(c) 2, 2-dimethyl ethane
(iv) 	(d) 3, 3-dimethyl pentane
	(e) 3, 3-diethyl pentane

A. (i-d), (ii-b), (iii-a), (iv-b)

B. (i-e), (ii-d), (iii-c), (iv-d)

C. (i-e), (ii-b), (iii-a), (iv-b)

D. (i-d), (ii-e), (iii-a), (iv-b)

Answer: C

 [View Text Solution](#)

183. Give the IUPAC name of $N \equiv C - CH_2 - CH |_{C \equiv N} - CH_2 - C \equiv N$

A. 3-cynopentane-1, 5-dinitrile

B. 1, 2, 4-tricynopropane

C. 1, 2, 3-tripropanenitrile

D. 3-cynopentane-1, 3-dinitrile

Answer: A

 [View Text Solution](#)

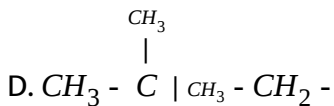
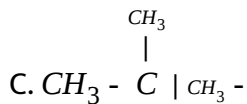
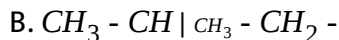
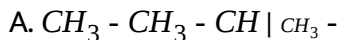
184. Give the IUPAC name of $CH_3 - CH |_{OCH_3} - C | |_{O} - CH |_{OCH_2CH_3} - CH_3$

- A. 4-methoxy-2-ethoxy-2-one
- B. 2-ethoxy-4-methoxypentane-2-one
- C. 4-methoxy-2-ethoxypentane-3-one
- D. 2-methoxy-4-ethoxypentane-3-one

Answer: D

 [View Text Solution](#)

185. Which is the structural formula of isobutyl group?



Answer: B



[View Text Solution](#)

186. 4-methyl-pent-2-yne has how many σ and π bond?

A. $15\sigma, 2\pi$

B. $12\sigma, 2\pi$

C. $13\sigma, 2\pi$

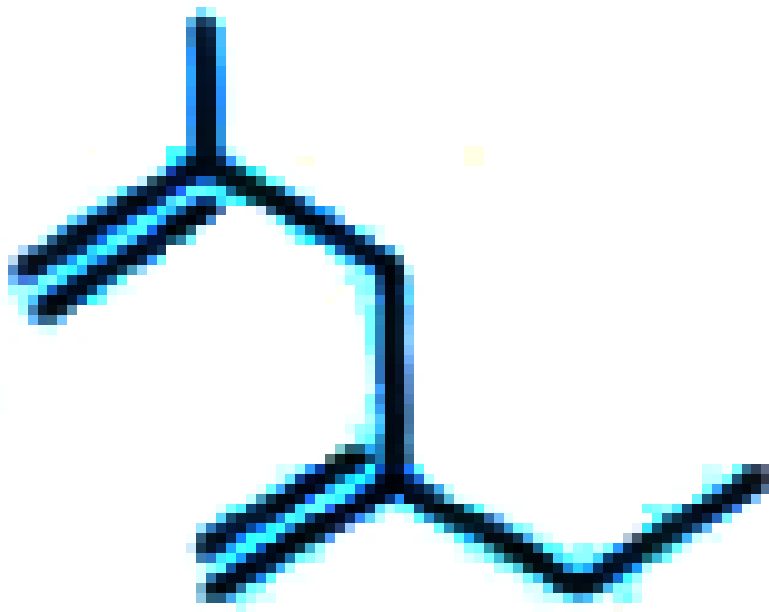
D. $14\sigma, 2\pi$

Answer: A



[View Text Solution](#)

187. The IUPAC name of



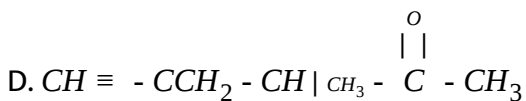
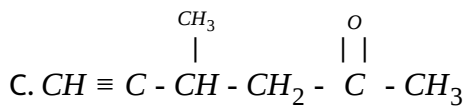
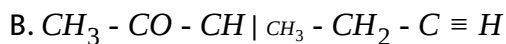
is

- A. 2-ethyl, hexa-1-ene
- B. 2-ethyl-4-methyl, pent-1-ene
- C. 2-methyl, -hex-1-ene
- D. 2-methyl-4-ethyl, oct-1-ene

Answer: B

[View Text Solution](#)

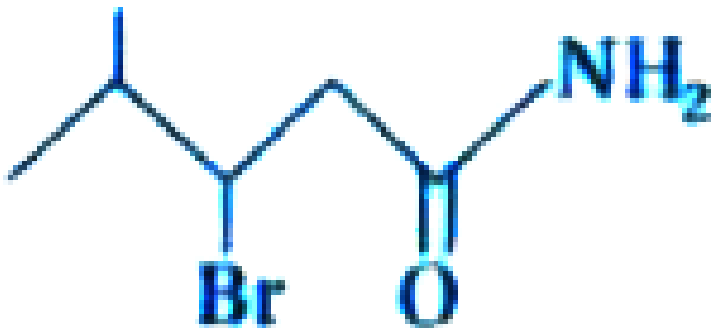
188. Which is the structural formula of 4-methyl hex-5-yne-2-one?



Answer: C

[View Text Solution](#)

189. The IUPAC name of



is.....

- A. 4-bromo-5-methyl-1-amino hex-2 one
- B. 3-bromo-4-methylpentamide
- C. 3-bromo, 2-methyl, 5-ketohexenamide
- D. 4-bromo, 5-methyl, 5-hexenamide

Answer: B

[View Text Solution](#)

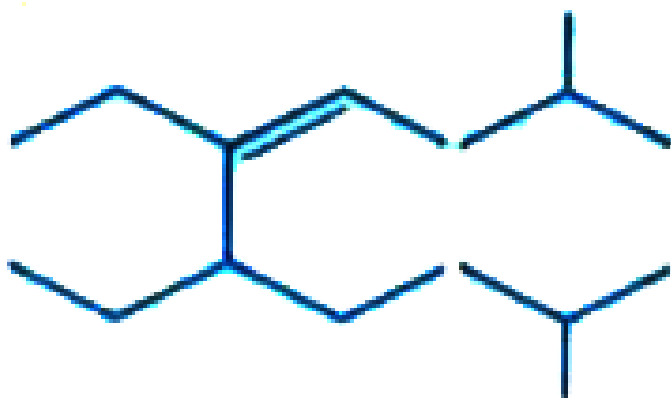
190. The IUPAC name of $CH_3 - C \begin{matrix} | \\ O \\ | \\ CN \end{matrix} - CH_2 - C \begin{matrix} | \\ CH_3 \end{matrix} - CH_3$ is.....

- A. 2-cyno-2-methyl-4-oxopentane
- B. 4-cyno-4-methyl-2-pentanone
- C. 2, 2-dimethyl-4-one-butanenitrile
- D. 2, 2-dimethyl-4-one-pentanitrile

Answer: D

 [View Text Solution](#)

191. Give the IUPAC name of the following compound



- A. 5, 6-diethyl-2-9 -dimethyl-dec-4-ene
- B. 5, 6-butyl, 5-ethyl-3-methyl-oct-4-ene

C. 2, 4-diethyl-2, 8-dimethyl-non-4-ene

D. 5, 6 diethyl-2, 9-dimethyl-dec-6-ene

Answer: A



[View Text Solution](#)

192. Which is the prefix of ether in IUPAC nomenclature?

A. a L

B. oate

C. alcoxy

D. oyl

Answer: C



[View Text Solution](#)

193. What is +E effect?

- A. Transfer of electron takes place towards the attacking reagent
- B. Transfer of electrons takes place away from the attacking reagent
- C. Atoms having less electron attracting power than that of hydrogen
- D. Atoms having more electrons attracting power than that of hydrogen

Answer: A



[View Text Solution](#)

194. Atoms or group of atoms having more electrons attracting power than that of hydrogen is known as.....

- A. +I effect
- B. -I effect
- C. +E effect

D. -Effect

Answer: B

 [View Text Solution](#)

195. How many carbons are there in the longest chain for IUPAC nomenclature of the molecule $CH_3 - CH_2 - CH(CH_2 - CH_2 - CH_3)_2$?

A. 4

B. 6

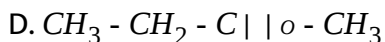
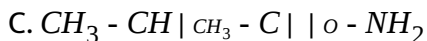
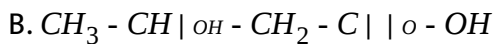
C. 7

D. 9

Answer: C

 [View Text Solution](#)

196. Which of the following is ketone compound?

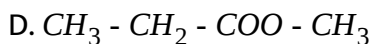
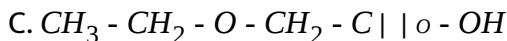
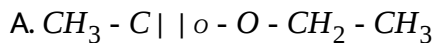


Answer: D



View Text Solution

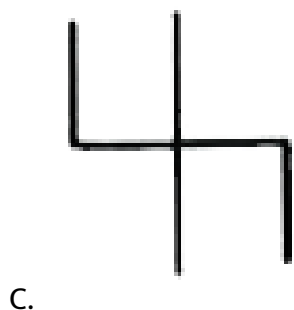
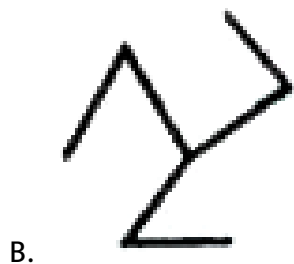
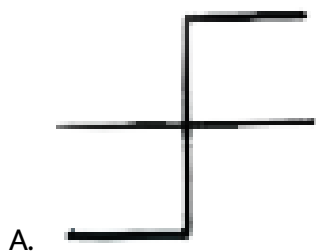
197. Which of the following is correct formula of ethyl acetate?



Answer: A

 [View Text Solution](#)

198. Which of the following is the structure of 3-ethyl pentane?



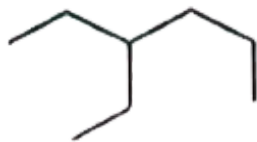


D.

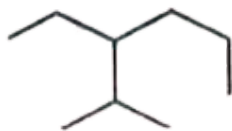
Answer: B

 [View Text Solution](#)

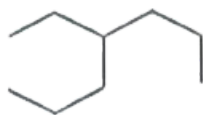
199. Which of the following molecules has maximum carbon atoms in the longest chain?



A.

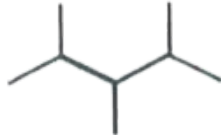


B.



C.

D.



Answer: C

 [View Text Solution](#)

200. Which of following is not correct IUPAC name?

A. $CH_3 - CH_2 - CH_2 - COO - CH_2 - CH_3$ Ethyl butanoate

B. $CH_3 - CH |_{CH_3} - CH_2 - CHO$ 3-Methyl butanal

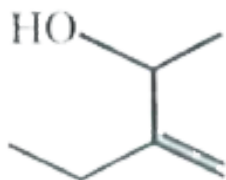
C. $CH_3 - CH |_{OH} - CH |_{CH_3} - CH_3$ 2-Methyl, 3-butanol

D. $CH_3 - CH |_{CH_3} - C |_{O} - CH_2 - CH_3$ 2-Methyl-3-pentanone

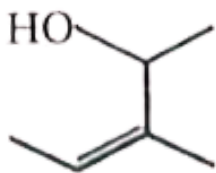
Answer: C

 [View Text Solution](#)

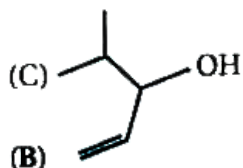
201. Which of the following is the formula of 3-methyl pent3-ene-2-ol



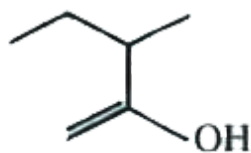
A.



B.



C.



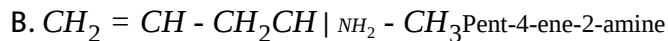
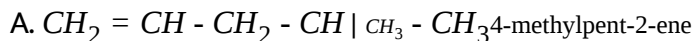
D.

Answer: B



View Text Solution

202. Which of the following IUPAC name of the molecule is not correct?



Answer: C



[View Text Solution](#)

203. Which of the following is correct matching of Column-I containing formulas and Column-II containing their names:

Column-I	Column-II
(i) $\text{CH}_3\text{COOCH}_3$	(a) Butane-1-amine
(ii) $\text{CH}_3\text{COCH}_2\text{CH}_3$	(b) But-2-one
(iii) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CHO}$	(c) Butanamide
(iv) $\text{CH}_3-\text{CH}(\text{OH})\text{CH}_3$	(d) Prop-2-ol
(v) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CONH}_2$	(e) Butanal
(vi) $\text{CH}_3-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{NH}_2$	(f) Methyl ethanoate

A. $i \rightarrow d, ii \rightarrow e, iii \rightarrow a, iv \rightarrow f, v \rightarrow c, vi \rightarrow b$

B. $i \rightarrow f, ii \rightarrow b, iii \rightarrow e, iv \rightarrow d, v \rightarrow c, vi \rightarrow a$

C. $i \rightarrow f, ii \rightarrow e, iii \rightarrow b, iv \rightarrow d, v \rightarrow a, vi \rightarrow c$





D. $i \rightarrow d, ii \rightarrow c, iii \rightarrow b, iv \rightarrow e, v \rightarrow a, vi \rightarrow f$

Answer: B

 [View Text Solution](#)

204. Match the structure in column-I with their IUPAC names in column-II.

Which of the following pair is correct matching?

Column-I	Column-II
(P) 	(W) 2, 2 - Dimethyl propane
(Q) 	(X) 3, 3 - Dimethyl pentane
(R) 	(Y) <i>n</i> -Pentane
(S) 	(Z) 3, 3 - Diethyl pentane

A. $P \rightarrow Z, Q \rightarrow Y, R \rightarrow W, S \rightarrow X$

B. $P \rightarrow X, Q \rightarrow Z, R \rightarrow Y, S \rightarrow W$

C. $P \rightarrow W, Q \rightarrow X, R \rightarrow Z, S \rightarrow Y$

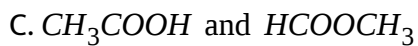
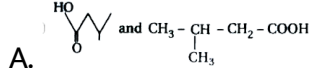
D. $P \rightarrow Y, Q \rightarrow W, R \rightarrow X, S \rightarrow Z$

Answer: B



[View Text Solution](#)

205. Which of the following pair of molecules has not same IUPAC name?



Answer: C

 [View Text Solution](#)

206. Which molecule has the longest carbon chain?

A. Isopentane

B. Neopentane

C. 2-methyl pentane

D. 2, 2-dimethyl butane

Answer: C

 [View Text Solution](#)

Section -C - MCQs asked in Competitive Exams

1. The compound having both sp and sp^2 hybridised carbon atoms is.....

- A. propene
- B. propyne
- C. 3-ene 1-butyne
- D. butadiene-1, 3

Answer: C



[View Text Solution](#)

2. The molecule in which the distance between the two adjacent carbon atom is largest in.....

- A. ethane

B. ethene

C. ethyne

D. benzene

Answer: A



[View Text Solution](#)

3. Among the given cations, the most stable carbonium ion is....

A. sec. butyl

B. tert.butyl

C. n-butyl

D. isobutyl

Answer: B



[View Text Solution](#)

4. The compound $C_4H_{10}O$ can show.....

- A. metamerism
- B. position isomerism
- C. functional isomerism
- D. all the three

Answer: D



[View Text Solution](#)

5. The maximum number of isomers for an alkene with molecular formula

C_4H_8 is....

- A. two
- B. three
- C. four
- D. six

Answer: B



[View Text Solution](#)

6. The no. of possible isomers of $C_4H_{10}O$ is....

A. 7

B. 6

C. 4

D. 3

Answer: A



[View Text Solution](#)

7. The highest boiling point is expected for....

A. iso-octane

B. n-octane

C. 2, 2, 3, 3-tetramethyl butane

D. n-butane

Answer: B

 [View Text Solution](#)

8. Only two isomeric monochloro derivatives are possible for.....

A. n-butane

B. 2, 4-dimethyl pentane

C. benzene

D. 2-methyl propane

Answer: A:D

 [View Text Solution](#)

9. An isomer of ethanol is.....

A. methanol

B. diethyl ether

C. acetone

D. dimethyl ether

Answer: D



[View Text Solution](#)

10. The bond between carbon atom (1) and carbon atom (2) in the

compound $N \equiv \overset{1}{C} - \overset{2}{CH} = \overset{3}{CH_2}$ involves the hybrids as.....

A. sp and sp^2

B. sp^2 and sp^2

C. sp and sp

D. sp^3 and sp

Answer: A



[View Text Solution](#)

11. Ethylene readily undergoes.....

- A. addition
- B. substitution
- C. elimination
- D. rearrangement

Answer: A



[View Text Solution](#)

12. The compound which is not isomeric with diethyl ether is....

- A. methyl n-propyl ether

B. butanol-1

C. 2-methyl propan-2-ol

D. butanone

Answer: D

 [View Text Solution](#)

13. The number of isomers of C_6H_{14} are.....

A. 4

B. 5

C. 6

D. 7

Answer: B

 [View Text Solution](#)

14. The total no. of isomers for the compounds of the formula C_4H_8O are.....

A. 3

B. 4

C. 5

D. 7

Answer: D



[View Text Solution](#)

15. Which of the following has bond formed by overlap of sp^3 - sp hybrid orbitals?

A. $CH_3 - C \equiv C - H$

B. $CH_3 - CH = CH - CH_3$

C. $CH_2 = CH - CH = CH_2$

D. $HC \equiv CH$

Answer: A



[View Text Solution](#)

16. The isomerism exhibited by alkyl cyanide and alkyl isocyanide is.....

A. functional group

B. position isomer

C. skeletal isomerism

D. metamerism

Answer: A



[View Text Solution](#)

17. In the compound $CH_2 = CH - CH_2 - CH_2 - C \equiv CH$ the $C_2 - C_3$ bond is of the type

A. $sp - sp^2$

B. $sp^3 - sp^3$

C. $sp - sp^3$

D. $sp^2 - sp^3$

Answer: C



[View Text Solution](#)

18. A solution of (+) 2-chloro-2-phenyl ethane in toluene racemises slowly in the presence of small amount of $SbCl_5$, due to the formation of.....

A. carbanion

B. carbene

C. free radical

D. carbocation

Answer: D

 [View Text Solution](#)

19. Carbon atoms in the compound CH_4C_2 are.....

A. sp hybridized

B. sp^2 hybridized

C. sp and sp^2 hybridized

D. sp, sp^2 and sp^3 hybridized

Answer: C

 [View Text Solution](#)

20. Give IUPAC name of $CH_3 - CH_2COOC_2H_5$

- A. ethyl but-1-anoate
- B. ethylpropanoate
- C. ethylprop-2-anoate
- D. None of these

Answer: B

 [View Text Solution](#)

21. Which of the following has least nucleophilicity?

- A. F^-
- B. OH^-
- C. CH_3^-
- D. NH_2^-

Answer: D

 [View Text Solution](#)

22. The no. of isomers for the compound with molecular formula $C_2BrClFI$ is.....

A. 3

B. 4

C. 5

D. 6

Answer: D



[View Text Solution](#)

23. The C-C bond length in benzene is equal due to.....

A. isomerism

B. tautomerism

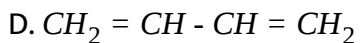
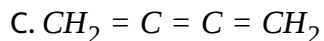
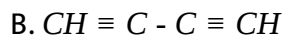
C. sp^2 hybridization

D. inductive effect

Answer: C

 [View Text Solution](#)

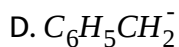
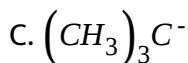
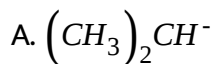
24. In which of the compound $sp^2 - sp^2 - sp - sp$ hybridization shift from left to right?



Answer: A

 [View Text Solution](#)

25. Which one is the most stable carbanion?



Answer: D



View Text Solution

26. Which one of the following has only primary hydrogen atom?

A. isobutane

B. propanamide

C. cyclohexane

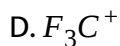
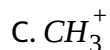
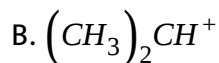
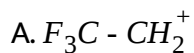
D. 2, 3-dimethyl-2butene

Answer: D



View Text Solution

27. Which one is the most stable carbonium ion?

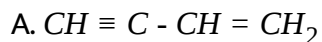


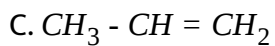
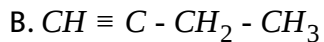
Answer: B



View Text Solution

28. In which of the following compound sp^2 - hybridisation is absent?





Answer: B

 [View Text Solution](#)

29. The number of sigma (σ) bonds in 1-butene is

A. 8

B. 10

C. 11

D. 12

Answer: C

 [View Text Solution](#)

30. The correct order for homolytic bond dissociation energies (ΔH in kcal/mol) for $CH_4(A)$, $C_2H_6(B)$ and $CH_3Br(C)$ is....

A. $C > B > A$

B. $B > C > A$

C. $C > A > B$

D. $A > B > C$

Answer: B



[View Text Solution](#)

31. The hybridisation in methane, ethene and Ethyne respectively is.....

A. sp^3 , sp^2 and sp

B. sp^3 , sp , sp^2

C. sp^2 , sp^3 and sp

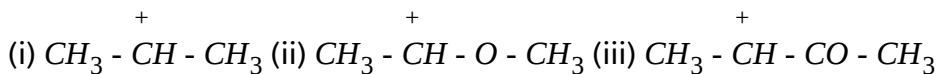
D. sp , sp^2 , sp^3

Answer: A



View Text Solution

32. Which is the correct decreasing order of stability?



A. (i) < (ii) < (iii)

B. (i) > (ii) > (iii)

C. (iii) > (ii) > (i)

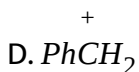
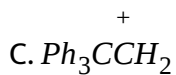
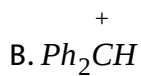
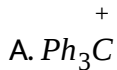
D. (ii) > (iii) > (i)

Answer: B



View Text Solution

33. Which of the following is the most stable compound?



Answer: A

 [View Text Solution](#)

34. The compound having both sp and sp^2 hybridised carbon atoms is.....

A. propene

B. propyne

C. 3-ene 1-butyne

D. butadiene-1, 3

Answer: C

 [View Text Solution](#)

35. The molecule in which the distance between the two adjacent carbon atom is largest in.....

- A. ethane
- B. ethene
- C. ethyne
- D. benzene

Answer: A



[View Text Solution](#)

36. Among the given cations, the most stable carbonium ion is....

- A. sec. butyl
- B. tert.butyl
- C. n-butyl

D. isobutyl

Answer: B



[View Text Solution](#)

37. The compound $C_4H_{10}O$ can show.....

A. metamerism

B. position isomerism

C. functional isomerism

D. all the three

Answer: D



[View Text Solution](#)

38. The maximum number of isomers for an alkene with molecular formula C_4H_8 is....

- A. two
- B. three
- C. four
- D. six

Answer: B



[View Text Solution](#)

39. The no. of possible isomers of $C_4H_{10}O$ is....

- A. 7
- B. 6
- C. 4
- D. 3

Answer: A



[View Text Solution](#)

40. The highest boiling point is expected for.....

- A. iso-octane
- B. n-octane
- C. 2, 2, 3, 3-tetramethyl butane
- D. n-butane

Answer: B



[View Text Solution](#)

41. Only two isomeric monochloro derivatives are possible for.....

- A. n-butane

B. 2, 4-dimethyl pentane

C. benzene

D. 2-methyl propane

Answer: A::D

 [View Text Solution](#)

42. An isomer of ethanol is.....

A. methanol

B. diethyl ether

C. acetone

D. dimethyl ether

Answer: D

 [View Text Solution](#)

43. The bond between carbon atom (1) and carbon atom (2) in the

compound $N \equiv \overset{1}{C} - \overset{2}{CH} = \overset{3}{CH_2}$ involves the hybrids as....

A. sp and sp^2

B. sp^2 and sp^2

C. sp and sp

D. sp^3 and sp

Answer: A



[View Text Solution](#)

44. Ethylene readily undergoes....

A. addition

B. substitution

C. elimination

D. rearrangement

Answer: A



[View Text Solution](#)

45. The compound which is not isomeric with diethyl ether is....

A. methyl n-propyl ether

B. butanol-1

C. 2-methyl propan-2-ol

D. butanone

Answer: D



[View Text Solution](#)

46. The number of isomers of C_6H_{14} are.....

A. 4

B. 5

C. 6

D. 7

Answer: B

 [View Text Solution](#)

47. The total no. of isomers for the compounds of the formula C_4H_8O are.....

A. 3

B. 4

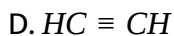
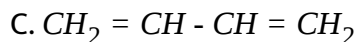
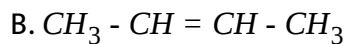
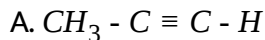
C. 5

D. 7

Answer: D

 [View Text Solution](#)

48. Which of the following has bond formed by overlap of sp^3 - sp hybrid orbitals?



Answer: A

 [View Text Solution](#)

49. The isomerism exhibited by alkyl cyanide and alkyl isocyanide is.....

A. functional group

B. position isomer

C. skeletal isomerism

D. metamerism

Answer: A

 [View Text Solution](#)

50. In the compound $CH_2 = CH - CH_2 - CH_2 - C \equiv CH$ the $C_2 - C_3$ bond is of the type

A. $sp - sp^2$

B. $sp^3 - sp^3$

C. $sp - sp^3$

D. $sp^2 - sp^3$

Answer: C

 [View Text Solution](#)

51. A solution of (+) 2-chloro-2-phenyl ethane in toluene racemises slowly in the presence of small amount of $SbCl_5$, due to the formation of.....

- A. carbanion
- B. carbene
- C. free radical
- D. carbocation

Answer: D



[View Text Solution](#)

52. Carbon atoms in the compound CH_4C_2 are.....

- A. sp hybridized
- B. sp^2 hybridized
- C. sp and sp^2 hybridized
- D. sp, sp^2 and sp^3 hybridized

Answer: C

 [View Text Solution](#)

53. Give IUPAC name of $CH_3 - CH_2COOC_2H_5$

- A. ethyl but-1-anoate
- B. ethylpropanoate
- C. ethylprop-2-anoate
- D. None of these

Answer: B

 [View Text Solution](#)

54. Which of the following has least nucleophilicity?

- A. F^-

B. OH^-

C. CH_3^-

D. NH_2^-

Answer: D

 [View Text Solution](#)

55. The no. of isomers for the compound with molecular formula C_2BrClFI is.....

A. 3

B. 4

C. 5

D. 6

Answer: D

 [View Text Solution](#)

56. The C-C bond length in benzene is equal due to.....

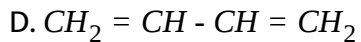
- A. isomerism
- B. tautomerism
- C. sp^2 hybridization
- D. inductive effect

Answer: C

 [View Text Solution](#)

57. In which of the compound $sp^2 - sp^2 - sp - sp$ hybridization shift from left to right?

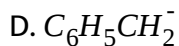
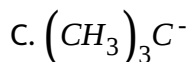
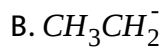
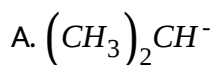
- A. $CH_2 = CH - CH \equiv N$
- B. $CH \equiv C - C \equiv CH$
- C. $CH_2 = C = C = CH_2$



Answer: A

 [View Text Solution](#)

58. Which one is the most stable carbanion?



Answer: D

 [View Text Solution](#)

59. Which one of the following has only primary hydrogen atom?

- A. isobutane
- B. propanamide
- C. cyclohexane
- D. 2, 3-dimethyl-2butene

Answer: D

 [View Text Solution](#)

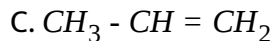
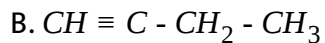
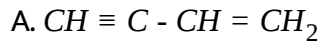
60. Which one is the most stable carbonium ion?

- A. $F_3C - CH_2^+$
- B. $(CH_3)_2CH^+$
- C. CH_3^+
- D. F_3C^+

Answer: B

 [View Text Solution](#)

61. In which of the following compound sp^2 - hybridisation is absent?



Answer: B



[View Text Solution](#)

62. The number of sigma (σ) bonds in 1-butene is

A. 8

B. 10

C. 11

D. 12

Answer: C

 [View Text Solution](#)

63. The correct order for homolytic bond dissociation energies (ΔH in kcal/mol) for $CH_4(A)$, $C_2H_6(B)$ and $CH_3Br(C)$ is....

A. $C > B > A$

B. $B > C > A$

C. $C > A > B$

D. $A > B > C$

Answer: B

 [View Text Solution](#)

64. The hybridisation in methane, ethene and Ethyne respectively is.....

A. sp^3 , sp^2 and sp

B. sp^3 , sp , sp^2

C. sp^2 , sp^3 and sp

D. sp , sp^2 , sp^3

Answer: A



View Text Solution

65. Which is the correct decreasing order of stability?

(i) $CH_3 - \overset{+}{C}H - CH_3$ (ii) $CH_3 - \overset{+}{C}H - O - CH_3$ (iii) $CH_3 - \overset{+}{C}H - CO - CH_3$

A. (i) < (ii) < (iii)

B. (i) > (ii) > (iii)

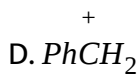
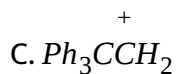
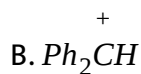
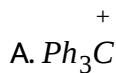
C. (iii) > (ii) > (i)

D. (ii) > (iii) > (i)

Answer: B

 [View Text Solution](#)

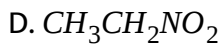
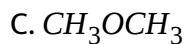
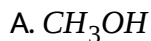
66. Which of the following is the most stable compound?



Answer: A

 [View Text Solution](#)

1. Which one of the following can not act as nucleophile?

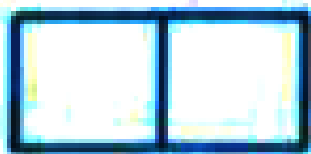


Answer: D

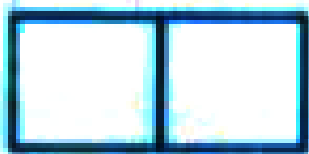


[View Text Solution](#)

2. The given electronic configuration of C in excited state



sp



$2p_y$ $2p_z$

configuration can form

This

A. Two π bond only

B. One σ -bond and three π -bonds

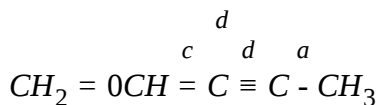
C. Two σ bond and two π -bond

D. Two σ bond only

Answer: C

 [View Text Solution](#)

3. With reference to (C-C) carbon-carbon distance which option is true for following compound?



A. $b < d < c < a$

B. $b < a < c < d$

C. $d < c < b < a$

D. $a < b < c < d$

Answer: A



[View Text Solution](#)

4. In the reaction- $CH_3CN \rightarrow CH_3COOH + NH_3$ The hybridisation of carbon in carbonyl group changes from-

A. sp to sp^3

B. sp^2 to sp

C. sp^3 to sp

D. sp to sp^2

Answer: D



[View Text Solution](#)

5. (Propanal, Propanone) and (Pentane-3-one, Pentane-2-one) represent the isomerism of which type respectively?

A. Metamerism, Position

B. Metamerism, Functional group

C. Functional group, Chain isomerism

D. Functional group, Metamerism

Answer: D

 [View Text Solution](#)

6. How many isomers are possible of an organic compound having molecule formula C_4H_8O ?

A. 4

B. 7

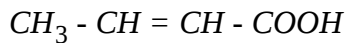
C. 10

D. 3

Answer: D

 [View Text Solution](#)

7. The number of π bond present in given compound is/are.....



A. 2

B. 4

C. 3

D. 1

Answer: A



[View Text Solution](#)

8. How many structural isomers are possible in the compound $C_3H_6Cl_2$?

A. 3

B. 2

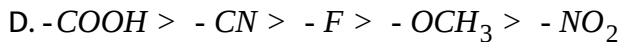
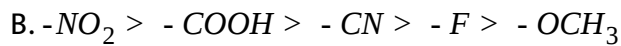
C. 4

D. Such isomers are not possible

Answer: C

 [View Text Solution](#)

9. From the following select the correct order of negative (-I) effect



Answer: A

 [View Text Solution](#)

10. Give hybridization of all carbon atom, number of σ and π bond and type of isomerism present in three carbon containing aldehyde compound

A. (sp^3, sp^3, sp^3) , $(9\sigma, 1\pi)$ (Functional group)

B. (sp^3, sp^3, sp^3) , $(9\sigma, 2\pi)$ (Functional group)

C. (sp^3, sp^3, sp^2) , $(9\sigma, 2\pi)$ (Position isomer)

D. (sp^3, sp^3, sp^2) , $(9\sigma, 1\pi)$ (Functional group)

Answer: D



[View Text Solution](#)

11. Which is used as Friedel -Craft catalyst?

A. $AlCl_3$

B. Al_2O_3

C. $AlPO_4$

D. Na_3AlF_6

Answer: A

 [View Text Solution](#)

12. Which of the following will have functional group isomerism?

A. Methanol

B. Formaldehyde

C. Methyl ethanoate

D. Acetaldehyde

Answer: C

 [View Text Solution](#)

13. How many σ and π bond are there in propylcyanide?

A. $10\sigma, 2\pi$

B. $8\sigma, 2\pi$

C. $10\sigma, 3\pi$

D. $11\sigma, 2\pi$

Answer: D

 [View Text Solution](#)

14. Which molecule has the longest carbon chain?

A. Iso-hexane

B. Iso-pentane

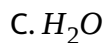
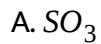
C. n-hexane

D. Neo heptane

Answer: C

 [View Text Solution](#)

15. Which of the following is an electrophile?

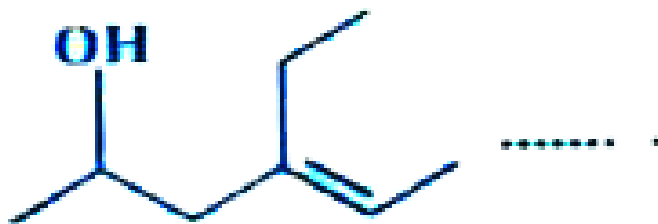


Answer: A



[View Text Solution](#)

16. The IUPAC name of the given compound



A. 2-ethylhex-4-en-2-ol

B. 4-ethylhex-2-en-2-ol

C. 2-ethylhex-2-en-4-ol

D. 4-ethylhex-4-en-2-ol

Answer: C

 [View Text Solution](#)

17. Acetone and prop-1-in-2-ol are example of which type of isomerism?

A. Position isomerism

B. tautomerism

C. Functional group

D. metamerism

Answer: B

 [View Text Solution](#)

18. Which of the following possesses 1° , 2° , 3° and 4° carbon?

- A. 2, 3-dimethyl hexane
- B. 2, 3, 3-trimethyl hexane
- C. 2, 2-dimethyl hexane
- D. 2, 3, 4-trimethyl hexane

Answer: B

 [View Text Solution](#)

19. The decreasing order of C-C bond length in $\overset{4}{CH_3} - \overset{3}{CH_2} - \overset{2}{CH} = \overset{1}{CH_2}$ is.....

- A. $C_4 - C_3 > C_2 - C_1 > C_3 - C_2$
- B. $C_3 - C_2 > C_2 - C_1 > C_4 - C_3$
- C. $C_2 - C_1 > C_4 - C_3 > C_3 - C_2$
- D. $C_4 - C_3 > C_3 - C_2 > C_2 - C_1$

Answer: D



View Text Solution

20. Which type of hybridisation is found in atoms of acetylene (ethyne)?

A. sp

B. sp^2

C. dsp^2

D. sp^3

Answer: A



View Text Solution

21. IUPAC name of compound $H - C \parallel O - O - C \parallel O - H$ is.....

A. Formic Anhydride

B. Methanoic Anhydride

C. Ethanoic Anhydride

D. Acetic Anhydride

Answer: B

 [View Text Solution](#)

22. Which compound has cis and trans Isomers?

A. $CH_3 - CHCl - CHO$

B. $H_2C = CHBr$

C. $ClCH = CHCl$

D. $ClCH_2 - CH_2Cl$

Answer: C

 [View Text Solution](#)

23. How many σ and π bonds are present in pent-3-ene-1-yne respectively?

A. $10\sigma, 3\pi$

B. $11\sigma, 2 - \pi$

C. $8\sigma, 3\pi$

D. $10\sigma, 4\pi$

Answer: A



[View Text Solution](#)

24. Which of the following is Nucleophile?

A. BF_3

B. H_2O

C. SO_3

D. $AlCl_3$

Answer: B



View Text Solution

25. Reaction: $CH_3 - CH(Cl) - CH_3 \xrightarrow[\text{Alcohol, KOH}]{Cl_2} x \rightarrow y$ Identify x and y respectively

- A. propene and 2, 2-dichloropropane
- B. propyne and 1, 3-dichloropropane
- C. propene and 1, 2-dichloropropane
- D. propane and 1, 2-dichloropropane

Answer: C



View Text Solution

26. No. of possible isomers $C_4H_{10}O$ formula does have.....

A. 7

B. 3

C. 5

D. 4

Answer: A

 [View Text Solution](#)

27. Choose the correct reactivity order from the following

A. $-CONH_2 > -COOR > -NO_2 > -X > -R$

B. $-CHO > -CONH_2 > -NH_2 > -CO- > -OH$

C. $-COOR > -CONH_2 > -C \equiv N > -CHO > -CO-$

D. $-C \equiv N > -COOH > -NH_2 > -COOR > -CONH_2$

Answer: C

 [View Text Solution](#)

28. Select the correct statements number for the following statements in sequence.

(i) IUPAC name of propyl cyanide is propanenitrile

(ii) IUPAC name of diethyl ether is ethoxyethane

(iii) Ethanol and vinyl alcohol are tautomers

(iv) Methoxypropane and ethoxyethane are metamers

(v) 2,3-dimethylbut-2-ene is more stable than 2-methylbut-2-ene

(vi) Stability order of carbocation is $1^\circ < 2^\circ < 3^\circ$

(vii) Hybridization of carbon atom does not change in elimination reaction.

(viii) Nucleophilicity is Lewis acid

A. 2, 4, 6, 8

B. 1, 3, 5, 7

C. 2, 4, 6, 7

D. 2, 4, 5, 6

Answer: D

 [View Text Solution](#)

29. Ethanal and Vinyl alcohol both are examples of which isomerism?

- A. Metamerism
- B. Tauomerism
- C. Position Isomerism
- D. Functional group Isomerism

Answer: B

 [View Text Solution](#)

30. In which of the following pairs of compounds, carbon atom is not sp^2 hybridised?

- A. butanal, butan-2-ol
- B. butanoic acid, butanone
- C. pentanamide, pent-1-ene
- D. 2-methyl propana-2-ol, butan-2-ol

Answer: D

 [View Text Solution](#)

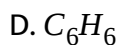
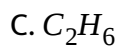
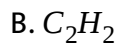
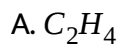
31. In which of the following compounds, hybridisation of all C-atoms is not the same?

- A. Ethane
- B. Ethene
- C. Ethyne
- D. prop-1-ene

Answer: D

 [View Text Solution](#)

32. In which compound C-C bond length is highest?



Answer: C

 [View Text Solution](#)

33. Which is the IUPAC name of $HCOOCH_3$?

A. Methyl ethanoate

B. Ethyl methanoate

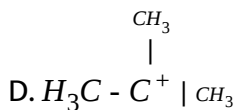
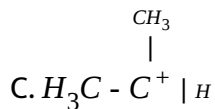
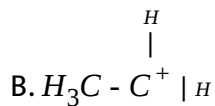
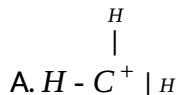
C. Methyl methanoate

D. Ethanoic acid

Answer: C

 [View Text Solution](#)

34. Which of the following carbo-cation is the most stable?



Answer: D

 [View Text Solution](#)

35. Which of the following pair of compounds exhibit tautomerism?

- A. Ethanal and vinyl alcohol
- B. Methyl propyl ether and diethyl ether
- C. Neo-pentane and n-pentane
- D. Propanal and propanone

Answer: A



[View Text Solution](#)

36. IUPAC name of $CH_3 - C |_{CH_3}H - CH_2 - CH - (CH_2 - CH_2 - CH_2 - CH_3)_2$

is.....

- A. 1, 1-dibutyl-3-methylbutane
- B. 4,4-dibutyl-2-methylbutane
- C. 5-(2-methyl propyl)nonane

D. 4-butyl-3-methyloctane

Answer: C



[View Text Solution](#)

37. Which of the following compounds possess the maximum number of π -bonds?

A. Formaldehyde

B. Formamide

C. Formic acid

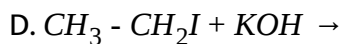
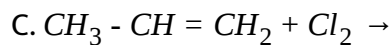
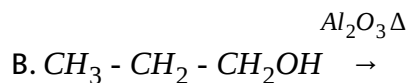
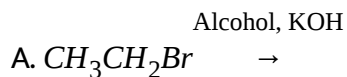
D. Formic anhydride

Answer: D



[View Text Solution](#)

38. In which of the following reaction, hybridisation of carbon atom containing functional group does not change



Answer: D



View Text Solution

39. Choose correct option to match column-A with column-B

(A) Reaction	(B) Products
(i) $\text{CH}_3\text{CH}_2\text{Cl} + \text{KOH}_{(\text{aq})} \rightarrow (?)$	(a) 1,2-dichloro ethane
(ii) $\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3 \xrightarrow{\text{AlCl}_3} (?)$	(b) Chloromethane
(iii) $\text{CH}_3\text{CH}_2\text{Br} + \text{alcoholic KOH} \rightarrow ?$	(c) Butane-2-ene
(iv) $\text{CH}_2 = \text{CH}_2 + \text{Cl}_2 \rightarrow (?)$	(d) Ethanol
	(e) Chloro ethane
	(f) Ethene
	(g) Isobutane

A. (i) \rightarrow d, (ii) \rightarrow f, (iii)a, (iv) \rightarrow b

B. (i) \rightarrow d, (ii) \rightarrow c, (iii)e, (iv) \rightarrow f

C. (i) \rightarrow e, (ii) \rightarrow g, (iii)f, (iv) \rightarrow e

D. (i) \rightarrow d, (ii) \rightarrow g, (iii)f, (iv) \rightarrow e

Answer: D



View Text Solution

40. Which of the following pairs of substance do not exhibit tautomerisms?

- A. propane-2-ol and prop-1-en-ol
- B. Pent-2, 4-dione and pent-3-en-4-ol-2-one
- C. 3-methyl pentan-2-one and 3-methyl pentan-3-ol
- D. eth-1-en-1-ol and ethanal

Answer: A::C::D



[View Text Solution](#)

41. Which of the following compound does not undergo addition reaction?

- A. Ethyne
- B. Ethane
- C. Ethanal

D. Ethene

Answer: D



[View Text Solution](#)

42. Which type of hybridization are shown by carbon atoms present in but-1-ene?

A. sp^2

B. sp^3 and sp^2

C. sp^2 and sp

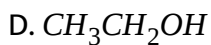
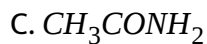
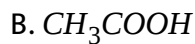
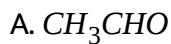
D. sp^3

Answer: B



[View Text Solution](#)

43. Which of the following compounds do not contain π -bond?



Answer: D

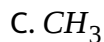


[View Text Solution](#)

44. Which of the following is not an electrophile?



+

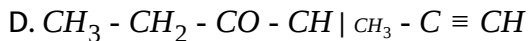
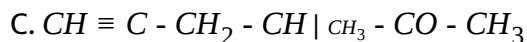
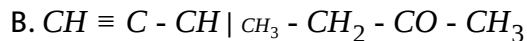
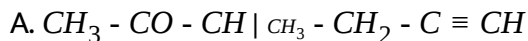


Answer: B



View Text Solution

45. Which is the structural formula of 4-methyl-hex-5-yne-2-one?



Answer: B



View Text Solution

46. How many structural isomers are possible for C_3H_9N ?

A. 4

B. 3

C. 2

D. 5

Answer: A



[View Text Solution](#)

47. Assertion: But -1-ene and 2-methyl prop-1-ene are position isomers.

Reason: Position isomers have same molecular formula but differ in the position of functional group

- A. Both Assertion and Reason are true and reason is not the correct explanation of the Assertion
- B. Assertion is true but reason is false
- C. Assertion is false but reason is true
- D. Both assertion and reason are true and reason is the correct explanation of the assertion

Answer: C



View Text Solution

48. The correct order of priority of the functional groups of organic compounds in the IUPAC system of nomenclature is.....

A. $-COOH > -CHO > -CN > -OH > -OR$

B. $-COOH > -CN > -CHO > -OR > -OH$

C. $-CHO > -COOH > -OH > -CN > -OR$

D. $-COOH > -CHO > -OH > -OR > -CN$

Answer: B



View Text Solution

49. Organic reactions are given in column-I and reaction names are given in column-II. Match column-I with column-II and chose the correct answer

Reaction	Name of reaction
(i) $\text{CH}_3\text{CH}_2\text{I} + \text{KOH} \rightarrow$	(p) Elimination
(ii) $\text{CH}_3\text{CH}_2\text{Br} + \text{KOH} \xrightarrow{\text{alcohol}}$	(q) Addition
(iii) $\text{CH}_2 = \text{CH}_2 + \text{Cl}_2 \rightarrow$	(r) Rearrangement
(iv) $\text{CH}_3 - \text{CH}_2 - \text{CH} = \text{CH}_2$ $\xrightarrow[\text{catalyst}]{\text{acid}}$	(s) Substitution

A. (i) \rightarrow s, (ii) \rightarrow q, (iii) \rightarrow p, (iv) \rightarrow r

B. (i) \rightarrow p, (ii) \rightarrow s, (iii) \rightarrow q, (iv) \rightarrow r

C. (i) \rightarrow s, (ii) \rightarrow p, (iii) \rightarrow r, (iv) \rightarrow q

D. (i) \rightarrow s, (ii) \rightarrow p, (iii) \rightarrow q, (iv) \rightarrow r

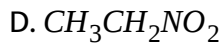
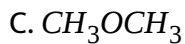
Answer: D



View Text Solution

50. Which one of the following can not act as nucleophile?

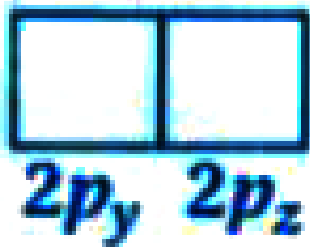
A. CH_3OH



Answer: D

 [View Text Solution](#)

51. The given electronic configuration of C in excited state



This

configuration can form

A. Two π bond only

B. One σ -bond and three π -bonds

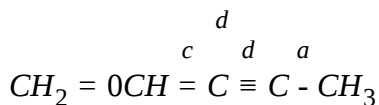
C. Two σ bond and two π -bond

D. Two σ bond only

Answer: C

 [View Text Solution](#)

52. With reference to (C-C) carbon-carbon distance which option is true for following compound?



A. $b < d < c < a$

B. $b < a < c < d$

C. $d < c < b < a$

D. $a < b < c < d$

Answer: A

 [View Text Solution](#)

53. In the reaction- $CH_3CN \rightarrow CH_3COOH + NH_3$ The hybridisation of carbon in carbonyl group changes from-

A. sp to sp^3

B. sp^2 to sp

C. sp^3 to sp

D. sp to sp^2

Answer: D



[View Text Solution](#)

54. (Propanal, Propanone) and (Pentane-3-one, Pentane-2-one) represent the isomerism of which type respectively?

A. Metamerism, Position

B. Metamerism, Functional group

C. Functional group, Chain isomerism

D. Functional group, Metamerism

Answer: D

 [View Text Solution](#)

55. How many isomers are possible of an organic compound having molecule formula C_4H_8O ?

A. 4

B. 7

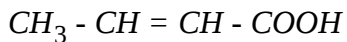
C. 10

D. 3

Answer: D

 [View Text Solution](#)

56. The number of π bond present in given compound is/are.....



- A. 2
- B. 4
- C. 3
- D. 1

Answer: A



[View Text Solution](#)

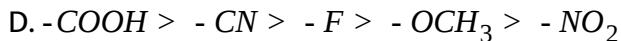
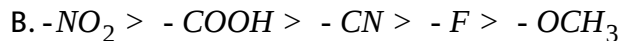
57. How many structural isomers are possible in the compound $\text{C}_3\text{H}_6\text{Cl}_2$?

- A. 3
- B. 2
- C. 4
- D. Such isomers are not possible

Answer: C

 [View Text Solution](#)

58. From the following select the correct order of negative (-I) effect



Answer: A

 [View Text Solution](#)

59. Give hybridization of all carbon atom, number of σ and π bond and type of isomerism present in three carbon containing aldehyde compound

- A. $(sp^3, sp^3, sp^3), (9\sigma, 1\pi)$ (Functional group)
- B. $(sp^3, sp^3, sp^3), (9\sigma, 2\pi)$ (Functional group)
- C. $(sp^3, sp^3, sp^2), (9\sigma, 2\pi)$ (Position isomer)
- D. $(sp^3, sp^3, sp^2), (9\sigma, 1\pi)$ (Functional group)

Answer: D

 [View Text Solution](#)

60. Which is used as Friedel -Craft catalyst?

- A. $AlCl_3$
- B. Al_2O_3
- C. $AlPO_4$
- D. Na_3AlF_6

Answer: A

 [View Text Solution](#)

61. Which of the following will have functional group isomerism?

- A. Methanol
- B. Formaldehyde
- C. Methyl ethanoate
- D. Acetaldehyde

Answer: C



[View Text Solution](#)

62. How many σ and π bond are there in propylcyanide?

- A. $10\sigma, 2\pi$
- B. $8\sigma, 2\pi$
- C. $10\sigma, 3\pi$

D. $11\sigma, 2\pi$

Answer: D



[View Text Solution](#)

63. Which molecule has the longest carbon chain?

A. Iso-hexane

B. Iso-pentane

C. n-hexane

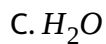
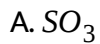
D. Neo heptane

Answer: C



[View Text Solution](#)

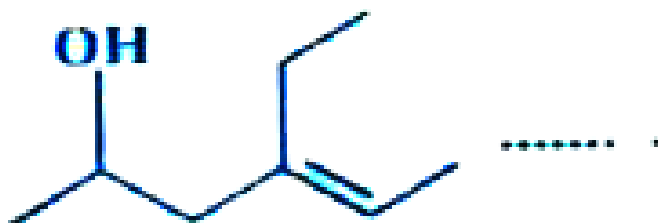
64. Which of the following is an electrophile?



Answer: A

 [View Text Solution](#)

65. The IUPAC name of the given compound



A. 2-ethylhex-4-en-2-ol

B. 4-ethylhex-2-en-2-ol

C. 2-ethylhex-2-en-4-ol

D. 4-ethylhex-4-en-2-ol

Answer: C

 [View Text Solution](#)

66. Acetone and prop-1-in-2-ol are example of which type of isomerism?

A. Position isomerism

B. tautomerism

C. Functional group

D. metamerism

Answer: B

 [View Text Solution](#)

67. Which of the following posses 1° , 2° , 3° and 4° carbon?

- A. 2, 3-dimethyl hexane
- B. 2, 3, 3-trimethyl hexane
- C. 2, 2-dimethyl hexane
- D. 2, 3, 4-trimethyl hexane

Answer: B

 [View Text Solution](#)

68. The decreasing order of C-C bond length in $\overset{4}{CH_3} - \overset{3}{CH_2} - \overset{2}{CH} = \overset{1}{CH_2}$ is.....

- A. $C_4 - C_3 > C_2 - C_1 > C_3 - C_2$
- B. $C_3 - C_2 > C_2 - C_1 > C_4 - C_3$
- C. $C_2 - C_1 > C_4 - C_3 > C_3 - C_2$
- D. $C_4 - C_3 > C_3 - C_2 > C_2 - C_1$

Answer: D



[View Text Solution](#)

69. Which type of hybridisation is found in atoms of acetylene (ethyne)?

A. sp

B. sp^2

C. dsp^2

D. sp^3

Answer: A



[View Text Solution](#)

70. IUPAC name of compound $H - C | | o - O - C | | o - H$ is.....

A. Formic Anhydride

B. Methanoic Anhydride

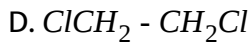
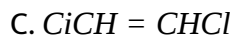
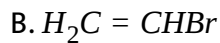
C. Ethanoic Anhydride

D. Acetic Anhydride

Answer: B

 [View Text Solution](#)

71. Which compound has cis and trans Isomers?



Answer: C

 [View Text Solution](#)

72. How many σ and π bonds are present in pent-3-ene-1-yne respectively?

A. $10\sigma, 3\pi$

B. $11\sigma, 2 - \pi$

C. $8\sigma, 3\pi$

D. $10\sigma, 4\pi$

Answer: A

 [View Text Solution](#)

73. Which of the following is Nucleophile?

A. BF_3

B. H_2O

C. SO_3

D. $AlCl_3$

Answer: B

 [View Text Solution](#)

74. Reaction: $CH_3 - CH |_{Cl} - CH_3 \xrightarrow[\text{Alcohol, KOH}]{Cl_2} x \rightarrow y$ Identify x and y respectively

- A. propene and 2, 2-dichloropropane
- B. propyne and 1, 3-dichloropropane
- C. propene and 1, 2-dichloropropane
- D. propane and 1, 2-dichloropropane

Answer: C

 [View Text Solution](#)

75. No. of possible isomers $C_4H_{10}O$ formula does have.....

- A. 7
- B. 3

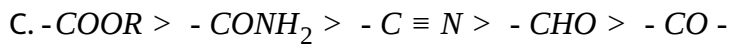
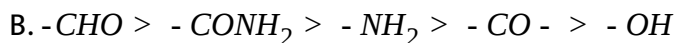
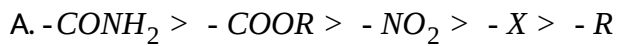
C. 5

D. 4

Answer: A

 [View Text Solution](#)

76. Choose the correct reactivity order from the following



Answer: C

 [View Text Solution](#)

77. Select the correct statements number for the following statements in sequence.

(i) IUPAC name of propyl cyanide is propanenitrile

(ii) IUPAC name of diethyl ether is ethoxyethane

(iii) Ethanol and vinyl alcohol are tautomers

(iv) Methoxypropane and ethoxyethane are metamers

(v) 2,3-dimethylbut-2-ene is more stable than 2-methylbut-2-ene

(vi) Stability order of carbocation is $1^\circ < 2^\circ < 3^\circ$

(vii) Hybridization of carbon atom does not change in elimination reaction.

(viii) Nucleophilicity is Lewis acid

A. 2, 4, 6, 8

B. 1, 3, 5, 7

C. 2, 4, 6, 7

D. 2, 4, 5, 6

Answer: D



[View Text Solution](#)

78. Ethanal and Vinyl alcohol both are examples of which isomerism?

- A. Metamerism
- B. Tauomerism
- C. Position Isomerism
- D. Functional group Isomerism

Answer: B



[View Text Solution](#)

79. In which of the following pairs of compounds, carbon atom is not sp^2 hybridised?

- A. butanal, butan-2-ol
- B. butanoic acid, butanone

C. pentanamide, pent-1-ene

D. 2-methyl propana-2-ol, butan-2-ol

Answer: D



[View Text Solution](#)

80. In which of the following compounds, hybridisation of all C-atoms is not the same?

A. Ethane

B. Ethene

C. Ethyne

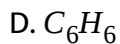
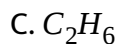
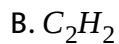
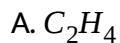
D. prop-1-ene

Answer: D



[View Text Solution](#)

81. In which compound C-C bond length is highest?



Answer: C



View Text Solution

82. Which is the IUPAC name of $HCOOCH_3$?

A. Methyl ethanoate

B. Ethyl methanoate

C. Methyl methanoate

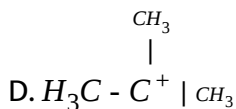
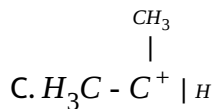
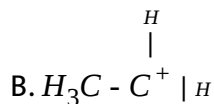
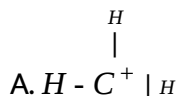
D. Ethanoic acid

Answer: C



View Text Solution

83. Which of the following carbo-cation is the most stable?



Answer: D



View Text Solution

84. Which of the following pair of compounds exhibit tautomerism?

- A. Ethanal and vinyl alcohol
- B. Methyl propyl ether and diethyl ether
- C. Neo-pentane and n-pentane
- D. Propanal and propanone

Answer: A

 [View Text Solution](#)

85. IUPAC name of $CH_3 - C |_{CH_3}H - CH_2 - CH - (CH_2 - CH_2 - CH_2 - CH_3)_2$ is.....

- A. 1, 1-dibutyl-3-methylbutane
- B. 4,4-dibutyl-2-methylbutane
- C. 5-(2-methyl propyl)nonane
- D. 4-butyl-3-methyloctane

Answer: C



[View Text Solution](#)

86. Which of the following compounds possess the maximum number of π -bonds?

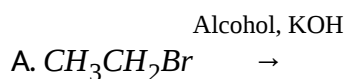
- A. Formaldehyde
- B. Formamide
- C. Formic acid
- D. Formic anhydride

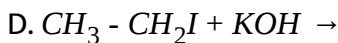
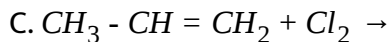
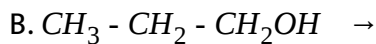
Answer: D



[View Text Solution](#)

87. In which of the following reaction, hybridisation of carbon atom containing functional group does not change





Answer: D

 [View Text Solution](#)

88. Choose correct option to match column-A with column-B

(A) Reaction	(B) Products
(i) $CH_3CH_2Cl + KOH_{(aq)} \rightarrow (?)$	(a) 1,2-dichloro ethane
(ii) $CH_3CH_2CH_2CH_3 \xrightarrow{AlCl_3} (?)$	(b) Chloromethane
(iii) $CH_3CH_2Br + \text{alcoholic KOH} \rightarrow ?$	(c) Butane-2-ene
(iv) $CH_2 = CH_2 + Cl_2 \rightarrow (?)$	(d) Ethanol
	(e) Chloro ethane
	(f) Ethene
	(g) Isobutane

A. (i) \rightarrow d, (ii) \rightarrow f, (iii) a, (iv) \rightarrow b

B. (i) $\rightarrow d$, (ii) $\rightarrow c$, (iii) e , (iv) $\rightarrow f$

C. (i) $\rightarrow e$, (ii) $\rightarrow g$, (iii) f , (iv) $\rightarrow e$

D. (i) $\rightarrow d$, (ii) $\rightarrow g$, (iii) f , (iv) $\rightarrow e$

Answer: D



[View Text Solution](#)

89. Which of the following pairs of substance do not exhibit tautomerisms?

A. propane-2-ol and prop-1-en-ol

B. Pent-2, 4-dione and pent-3-en-4-ol-2-one

C. 3-methyl pentan-2-one and 3-methyl pentan-3-ol

D. eth-1-en-1-ol and ethanal

Answer: A::C::D



[View Text Solution](#)

90. Which of the following compound does not undergo addition reaction?

A. Ethyne

B. Ethane

C. Ethanal

D. Ethene

Answer: D



[View Text Solution](#)

91. Which type of hybridization are shown by carbon atoms present in but-1-ene?

A. sp^2

B. sp^3 and sp^2

C. sp^2 and sp

D. sp^3

Answer: B



[View Text Solution](#)

92. Which of the following compounds do not contain π -bond?

A. CH_3CHO

B. CH_3COOH

C. CH_3CONH_2

D. CH_3CH_2OH

Answer: D

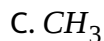


[View Text Solution](#)

93. Which of the following is not an electrophile?



+

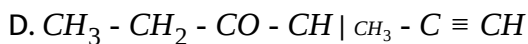
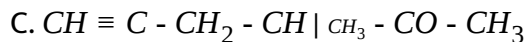
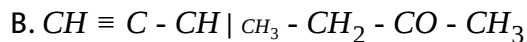
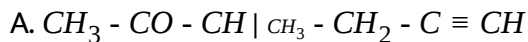


Answer: B



View Text Solution

94. Which is the structural formula of 4-methyl-hex-5-yne-2-one?



Answer: B

 [View Text Solution](#)

95. How many structural isomers are possible for C_3H_9N ?

A. 4

B. 3

C. 2

D. 5

Answer: A

 [View Text Solution](#)

96. Assertion: But -1-ene and 2-methyl prop-1-ene are position isomers.

Reason: Position isomers have same molecular formula but differ in the position of functional group

- A. Both Assertion and Reason are true and reason is not the correct explanation of the Assertion
- B. Assertion is true but reason is false
- C. Assertion is false but reason is true
- D. Both assertion and reason are true and reason is the correct explanation of the assertion

Answer: C



[View Text Solution](#)

97. The correct order of priority of the functional groups of organic compounds in the IUPAC system of nomenclature is.....

- A. $-COOH > -CHO > -CN > -OH > -OR$
- B. $-COOH > -CN > -CHO > -OR > -OH$
- C. $-CHO > -COOH > -OH > -CN > -OR$

D. $-\text{COOH} > -\text{CHO} > -\text{OH} > -\text{OR} > -\text{CN}$

Answer: B

 [View Text Solution](#)

98. Organic reactions are given in column-I and reaction names are given in column-II. Match column-I with column-II and chose the correct answer

Reaction	Name of reaction
(i) $\text{CH}_3\text{CH}_2\text{I} + \text{KOH} \rightarrow$	(p) Elimination
(ii) $\text{CH}_3\text{CH}_2\text{Br} + \text{KOH} \xrightarrow{\text{alcohol}}$	(q) Addition
(iii) $\text{CH}_2 = \text{CH}_2 + \text{Cl}_2 \rightarrow$	(r) Rearrangement
(iv) $\text{CH}_3 - \text{CH}_2 - \text{CH} = \text{CH}_2$ $\xrightarrow[\text{catalyst}]{\text{acid}}$	(s) Substitution

A. (i) \rightarrow s, (ii) \rightarrow q, (iii) \rightarrow p, (iv) \rightarrow r

B. (i) \rightarrow p, (ii) \rightarrow s, (iii) \rightarrow q, (iv) \rightarrow r

C. (i) \rightarrow s, (ii) \rightarrow p, (iii) \rightarrow r, (iv) \rightarrow q

D. (i) \rightarrow s, (ii) \rightarrow p, (iii) \rightarrow q, (iv) \rightarrow r

Answer: D



[View Text Solution](#)

Section -C - MCQs asked in JEE/NEET/AIEEE

1. Which of the following C-H bond has the lowest bond dissociation energy?

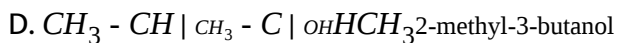
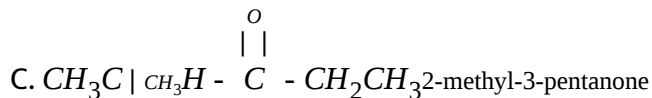
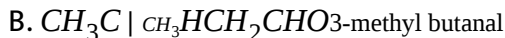
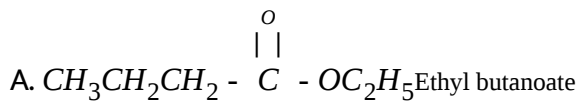
- A. Primary (1°) C - H bond
- B. Secondary (2°) C - H bond
- C. Tertiary (3°) C - H bond
- D. All of these

Answer: C



[View Text Solution](#)

2. Which of the following compound has incorrect IUPAC nomenclature?



Answer: D

 [View Text Solution](#)

3. The IUPAC name of $\text{CH}_3\text{COCH}(\text{CH}_3)_2$ is.....

A. isopropylmethyl ketone

B. 2-methyl-3-butanone

C. 4-methyl-isopropyl ketone

D. 3-methyl-2-butanone

Answer: D

 [View Text Solution](#)

4. The general formula $C_nH_{2n}O_2$ could be for open chain.....

- A. diketones
- B. carboxylic acids
- C. diols
- D. dialdehydes

Answer: B

 [View Text Solution](#)

5. In which compound carbon does not possess sp^2 hybridization?

- A. Acetone

B. Acetamide

C. Acetonitrile

D. Acetic acid

Answer: C

 [View Text Solution](#)

6. The IUPAC name of the compound is.....



A. 3, 3-dimethyl-1-hydroxycyclohexane

B. 1, 1-dimethyl-3-cyclohexanol

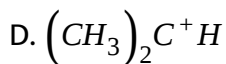
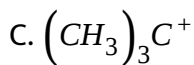
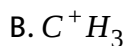
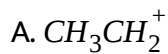
C. 3, 3-dimethyl-1-cyclohexanol

D. 1, 1-dimethyl-3-hydroxy cyclohexane

Answer: C

 [View Text Solution](#)

7. Which is the most stable carbonium ion?



Answer: C

 [View Text Solution](#)

8. Due to presence of an unpaired electron, free radicals are.....

A. chemically reactive

B. chemically inactive

C. anions

D. cations

Answer: A



[View Text Solution](#)

9. The number of possible aromatic structure for C_7H_8O is.....

A. 4

B. 7

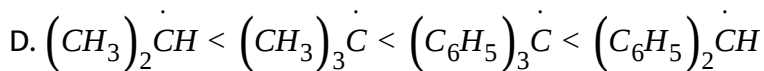
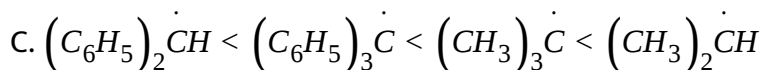
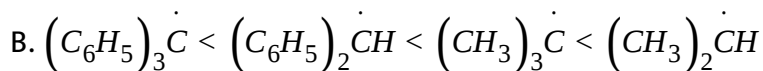
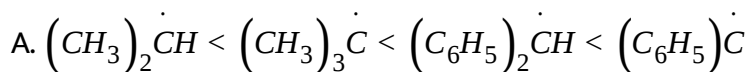
C. 9

D. 5

Answer: D

 [View Text Solution](#)

10. The increasing order of stability of the following free radicals is.....



Answer: A

 [View Text Solution](#)

11. The IUPAC name of the compound shown below is



- A. 2-bromo-6-chlorocyclohex-1-ene
- B. 6-bromo-2-chlorocyclohexene
- C. 3-bromo-1-chlorocyclohexene
- D. 1-bromo-3-chlorocyclohexene

Answer: C



[View Text Solution](#)

12. The IUPAC name of



is.....

- A. 1, 1-diethyl-2, 2-dimethyl pentane
- B. 4, 4-diethyl-5, 5-diethylpentane
- C. 5, 5-diethyl-4, 4-dimethylpentane
- D. 3-ethyl-4, 4-dimethylheptane

Answer: D



[View Text Solution](#)

13. The correct decreasing order of priority for the functional groups of organic compounds in the IUPAC system of nomenclature is.....

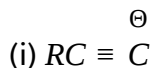
- A. $-SO_3H$, $-COOH$, $-CONH_2$, $-CHO$
- B. $-CHO$, $-COOH$, $-SO_3H$, $-CONH_2$
- C. $-CONH_2$, $-CHO$, $-SO_3H$, $-COOH$
- D. $-COOH$, $-SO_3H$, $-CONH_2$, $-CHO$

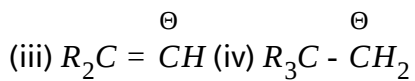
Answer: D



[View Text Solution](#)

14. The stability of the carbanions in the following is.....





A. (iv) > (ii) > (iii) > (i)

B. (i) > (iii) > (ii) > (iv)

C. (i) > (ii) > (iii) > (iv)

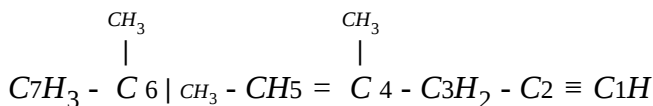
D. (ii) > (iii) > (iv) > (i)

Answer: B



View Text Solution

15. The state of hybridization of C_2 , C_3 , C_5 and C_6 of the hydrocarbon is in the following sequence.....



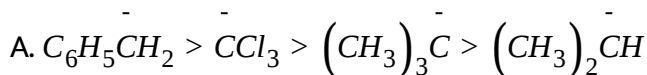
- A. sp , sp^3 , sp^2 and sp^3
- B. sp^3 , sp^2 , sp^2 and sp
- C. sp , sp^2 , sp^2 and sp^3
- D. sp , sp^2 , sp^3 and sp^2

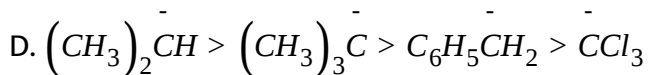
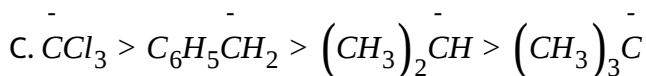
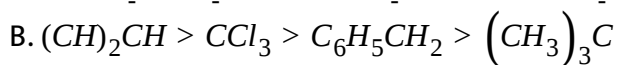
Answer: A



[View Text Solution](#)

16. Arrange the carbanions, $(CH)_3\bar{C}$, $\bar{C}Cl_3$, $(CH_3)_2\bar{C}H$, $C_6H_5\bar{C}H_2$ in order of their decreasing stability





Answer: C

 [View Text Solution](#)

17. The IUPAC name of neopentane is.....

A. 2-methylbutane

B. 2, 2-dimethylpropane

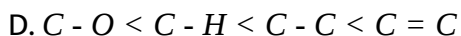
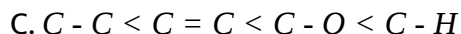
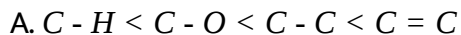
C. 2-methylpropane

D. 2, 2-dimethylbutane

Answer: B

 [View Text Solution](#)

18. The correct order of increasing bond length of $C-H$, $C-O$, $C-C$ and $C=C$ is.....



Answer: B



[View Text Solution](#)

19. Identify the compound that exhibits tautomerism.....

A. 2-butene

B. Lactic acid

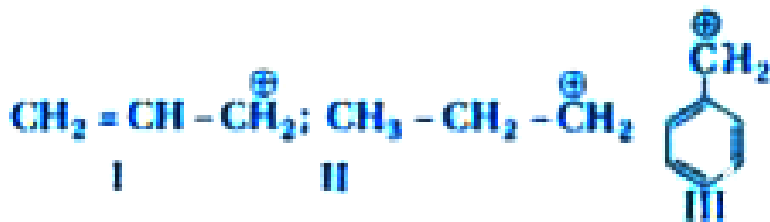
C. 2-pentanone

D. Phenol

Answer: C

 [View Text Solution](#)

20. The order of stability of the following carboncation is.....



A. $III > II > I$

B. $II > III > I$

C. $I > II > III$

D. $III > I > II$

Answer: D

 [View Text Solution](#)

21. Which of the following organic compounds has same hybridization as its combustion product - (CO_2) ?

A. Ethane

B. Ethyne

C. Ethene

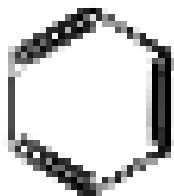
D. Ethanol

Answer: B

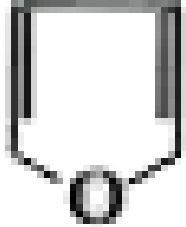


[View Text Solution](#)

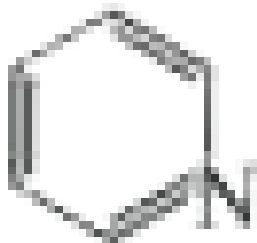
22. Which of the following molecules is least resonance stabilized?



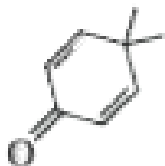
A.



B.



C.



D.

Answer: D

 [View Text Solution](#)

23. A water sample has ppm level concentration of following anions.

$$F^- = 10, SO_4^{2-} = 100, NO_3^- = 50$$

The anion/anions that make/makes the water sample unsuitable for drinking is/are.....

A. only NO_3^-

B. both SO_4^{2-} and NO_3^-

C. only F^-

D. only SO_4^{2-}

Answer: C



View Text Solution

24. The correct statement regarding ethane conformation is.....

A. Rotation around carbon-carbon bond in ethane molecule is not possible, because ethane molecule contains a pi (π) bond between the carbon and carbon and ethane has very low melting point

B. Rotation around carbon-carbon bond in ethane molecule is not possible, because ethane molecule contains both sigma (σ) bond and pi (π) bond between the carbon and carbon.

C. Rotation around carbon-carbon bond in ethane molecule is possible because of cylindrical symmetry of sigma (σ) bond between carbon-carbon atoms

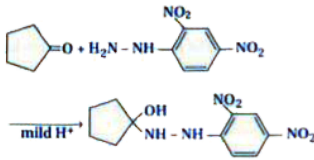
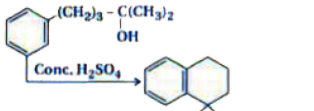
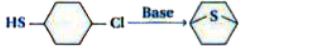
D. Rotation around carbon-carbon bond in ethane molecule is not possible, because ethane molecule contains both sigma (σ) bond and pi (π) bond between the carbon and carbon and ethane has very high boiling point

Answer: C



View Text Solution

25. Match Column-I with Column-II

Column-I	Column-II
<p>(A) </p>	<p>(P) Electrophilic Substitution</p> <p>(Q) Nucleophilic Substitution</p> <p>(R) Nucleophilic Addition</p>
<p>(B) </p>	
<p>(C) </p>	

A. A-P, B-Q, C-R

B. A-Q, B-R, C-P

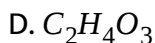
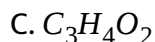
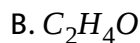
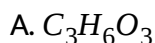
C. A-R, B-P, C-Q

D. A-R, B-Q, C-P

Answer: C

 [View Text Solution](#)

26. The ratio of mass percent of C and H of an organic compound ($C_xH_yO_z$) is 6: 1. If one molecule of the above compound ($C_xH_yO_z$) contains half as much oxygen as required to burn one molecule of compound C_xH_y completely to CO_2 and H_2O . The empirical formula of compound $C_xH_yO_z$ is.

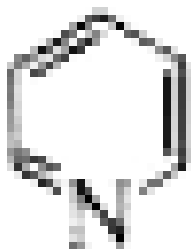


Answer: D



[View Text Solution](#)

27. Which of the following compound will be suitable for Kjeldahls method for nitrogen estimation?



A.



B.



C.

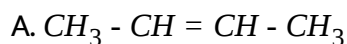


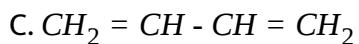
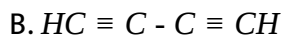
D.

Answer: B

 [View Text Solution](#)

28. Which of the following molecules represents the order of hybridisation sp^2 , sp^2 , sp , sp from left to right atoms?

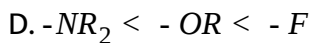
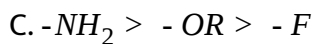
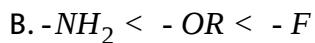
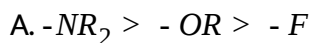




Answer: D

 [View Text Solution](#)

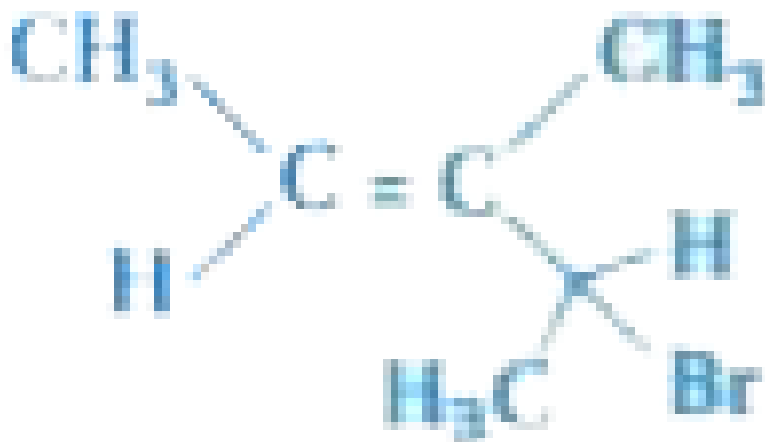
29. Which of the following is correct with respect to -I effect of the substituents? (R = alkyl)



Answer: A::B

 [View Text Solution](#)

30. What is the IUPAC name of the following compound ?



- A. 4-Bromo-3-methylpent-2-ene
- B. 2-Bromo-3-methylpent-3-ene
- C. 3-Bromo-3-methyl-1, 2-dimethylprop-1-ene
- D. 3-Bromo-1, 2-dimethylbut-1-ene

Answer: A

 [View Text Solution](#)

31. Which amongst the following is the strongest acid?



Answer: B



View Text Solution

32. The correct IUPAC name of the following compound is:



A. 5-chloro-4-methyl-1-nitrobenzene

- B. 2-methyl-5-nitro-1-chlorobenzene
- C. 3-chloro-4-methyl-1-nitrobenzene
- D. 2-chloro-1-methyl-4-nitrobenzene

Answer: D

 [View Text Solution](#)

33. A solution of m-chloroaniline, m-chlorophenol, m-chlorobenzoic acid in ethyl acetate was extracted initially with a saturated solution of NaHCO_3 to give fraction A, the leftover organic phase was extracted with dil. NaOH to give fraction B. The final organic layer was labelled as fraction C. Fractions A, B and C contains respectively.

- A. m-chlorobenzoic acid, m-chlorophenol and m-chloroaniline
- B. m-chlorophenol, m-chlorobenzoic acid and m-chloroaniline
- C. m-chloroaniline, m-chlorophenol and m-chlorobenzoic acid
- D. m-chlorobenzoic acid, m-chloroaniline and m-chlorophenol

Answer: A



[View Text Solution](#)

34. A flask contains a mixture of isohexane and 3-methylpentane. One of the liquids boils at 63°C while the other boils at 60°C . What is the best way to separate the two liquids and which one will be distilled out first?

- A. Fractional distillation, isohexane
- B. Simple distillation, 3-methylpentane
- C. Fractional distillation, 3-methylpentane
- D. Simple distillation, isohexane

Answer: A



[View Text Solution](#)

35. Which of the following C-H bond has the lowest bond dissociation energy?

- A. Primary (1°) C - H bond
- B. Secondary (2°) C - H bond
- C. Tertiary (3°) C - H bond
- D. All of these

Answer: C

 [View Text Solution](#)

36. Which of the following compound has incorrect IUPAC nomenclature?

- A. $CH_3CH_2CH_2 - \overset{\overset{O}{||}}{C} - OC_2H_5$ Ethyl butanoate
- B. $CH_3C |_{CH_3} HCH_2CHO$ 3-methyl butanal
- C. $CH_3C |_{CH_3} H - \overset{\overset{O}{||}}{C} - CH_2CH_3$ 2-methyl-3-pentanone

D. $\text{CH}_3 - \text{CH} | \text{CH}_3 - \text{C} | \text{OH} \text{HCH}_3$ 2-methyl-3-butanol

Answer: D

 [View Text Solution](#)

37. The IUPAC name of $\text{CH}_3\text{COCH}(\text{CH}_3)_2$ is.....

- A. isopropylmethyl ketone
- B. 2-methyl-3-butanone
- C. 4-methyl-isopropyl ketone
- D. 3-methyl-2-butanone

Answer: D

 [View Text Solution](#)

38. The general formula $\text{C}_n\text{H}_{2n}\text{O}_2$ could be for open chain.....

- A. diketones
- B. carboxylic acids
- C. diols
- D. dialdehydes

Answer: B

 [View Text Solution](#)

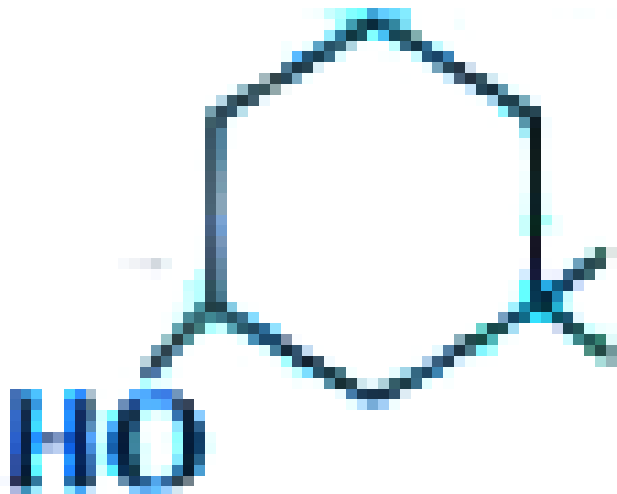
39. In which compound carbon does not possess sp^2 hybridization?

- A. Acetone
- B. Acetamide
- C. Acetonitrile
- D. Acetic acid

Answer: C

 [View Text Solution](#)

40. The IUPAC name of the compound is.....

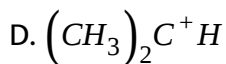
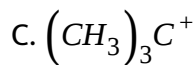
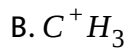
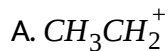


- A. 3, 3-dimethyl-1-hydroxycyclohexane
- B. 1, 1-dimethyl-3-cyclohexanol
- C. 3, 3-dimethyl-1-cyclohexanol
- D. 1, 1-dimethyl-3-hydroxy cyclohexane

Answer: C

 [View Text Solution](#)

41. Which is the most stable carbonium ion?



Answer: C



[View Text Solution](#)

42. Due to presence of an unpaired electron, free radicals are....

A. chemically reactive

B. chemically inactive

C. anions

D. cations

Answer: A

 [View Text Solution](#)

43. The number of possible aromatic structure for C_7H_8O is.....

A. 4

B. 7

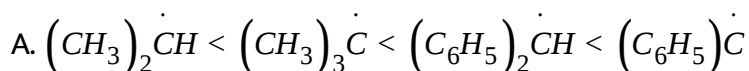
C. 9

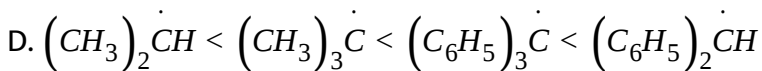
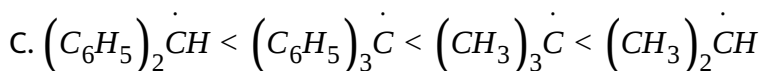
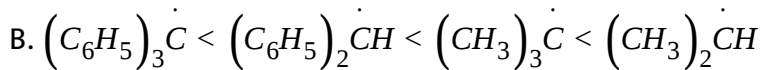
D. 5

Answer: D

 [View Text Solution](#)

44. The increasing order of stability of the following free radicals is.....



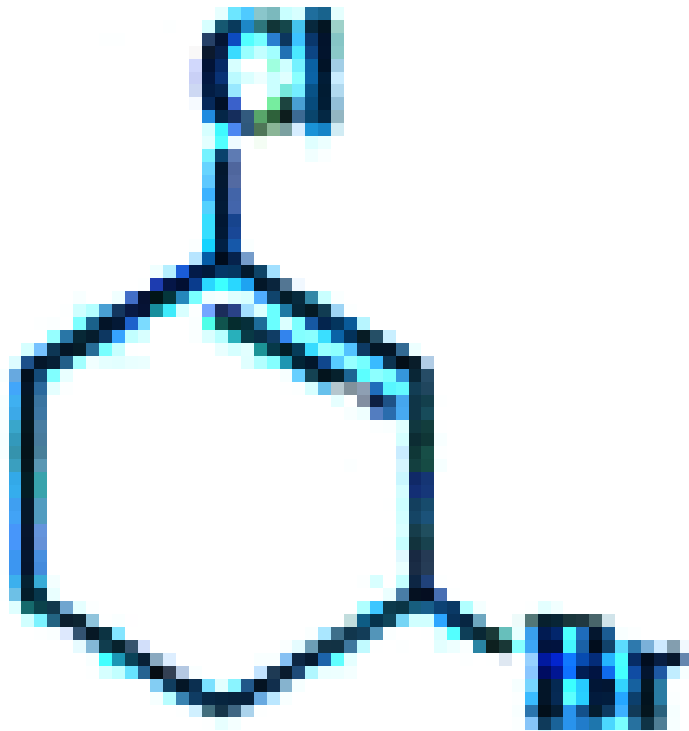


Answer: A



[View Text Solution](#)

45. The IUPAC name of the compound shown below is



- A. 2-bromo-6-chlorocyclohex-1-ene
- B. 6-bromo-2-chlorocyclohexene
- C. 3-bromo-1-chlorocyclohexene
- D. 1-bromo-3-chlorocyclohexene

Answer: C



[View Text Solution](#)

46. The IUPAC name of



is.....

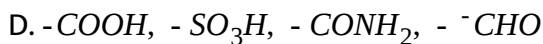
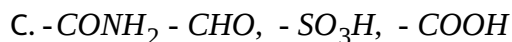
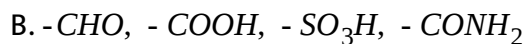
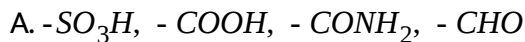
- A. 1, 1-diethyl-2, 2-dimethyl pentane
- B. 4, 4-diethyl-5, 5-diethylpentane
- C. 5, 5-diethyl-4, 4-dimethylpentane
- D. 3-ethyl-4, 4-dimethylheptane

Answer: D



[View Text Solution](#)

47. The correct decreasing order of priority for the functional groups of organic compounds in the IUPAC system of nomenclature is.....

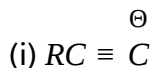


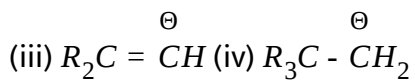
Answer: D



[View Text Solution](#)

48. The stability of the carbanions in the following is.....





A. (iv) > (ii) > (iii) > (i)

B. (i) > (iii) > (ii) > (iv)

C. (i) > (ii) > (iii) > (iv)

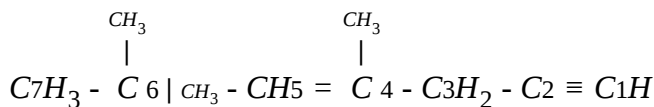
D. (ii) > (iii) > (iv) > (i)

Answer: B



View Text Solution

49. The state of hybridization of C_2 , C_3 , C_5 and C_6 of the hydrocarbon is in the following sequence.....

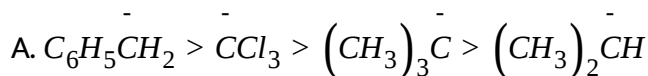


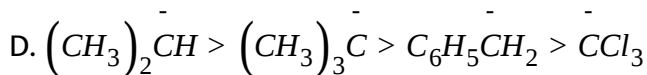
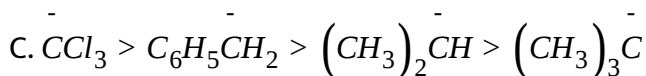
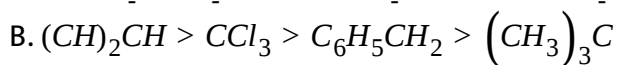
- A. sp , sp^3 , sp^2 and sp^3
- B. sp^3 , sp^2 , sp^2 and sp
- C. sp , sp^2 , sp^2 and sp^3
- D. sp , sp^2 , sp^3 and sp^2

Answer: A

 [View Text Solution](#)

50. Arrange the carbanions, $(CH)_3\bar{C}$, $\bar{C}Cl_3$, $(CH_3)_2\bar{C}H$, $C_6H_5\bar{C}H_2$ in order of their decreasing stability





Answer: C

 [View Text Solution](#)

51. The IUPAC name of neopentane is.....

A. 2-methylbutane

B. 2, 2-dimethylpropane

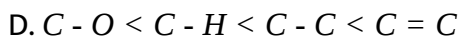
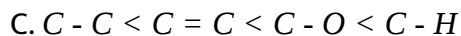
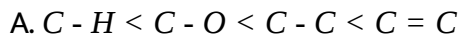
C. 2-methylpropane

D. 2, 2-dimethylbutane

Answer: B

 [View Text Solution](#)

52. The correct order of increasing bond length of $C-H$, $C-O$, $C-C$ and $C=C$ is.....



Answer: B



[View Text Solution](#)

53. Identify the compound that exhibits tautomerism.....

A. 2-butene

B. Lactic acid

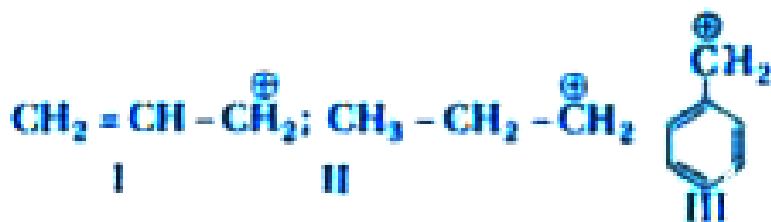
C. 2-pentanone

D. Phenol

Answer: C

 View Text Solution

54. The order of stability of the following carboncation is.....



A. $III > II > I$

B. $II > III > I$

C. $I > II > III$

D. $III > I > II$

Answer: D

 View Text Solution

55. Which of the following organic compounds has same hybridization as its combustion product - (CO_2) ?

A. Ethane

B. Ethyne

C. Ethene

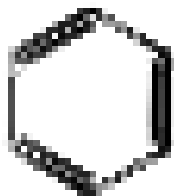
D. Ethanol

Answer: B

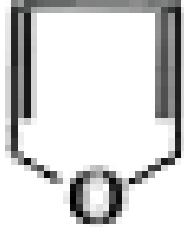


[View Text Solution](#)

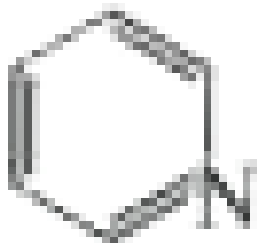
56. Which of the following molecules is least resonance stabilized?



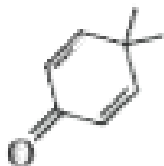
A.



B.



C.



D.

Answer: D



[View Text Solution](#)

57. A water sample has ppm level concentration of following anions.

$$F^- = 10, SO_4^{2-} = 100, NO_3^- = 50$$

The anion/anions that make/makes the water sample unsuitable for drinking is/are.....

A. only NO_3^-

B. both SO_4^{2-} and NO_3^-

C. only F^-

D. only SO_4^{2-}

Answer: C



View Text Solution

58. The correct statement regarding ethane conformation is.....

A. Rotation around carbon-carbon bond in ethane molecule is not possible, because ethane molecule contains a pi (π) bond between the carbon and carbon and ethane has very low melting point

B. Rotation around carbon-carbon bond in ethane molecule is not possible, because ethane molecule contains both sigma (σ) bond and pi (π) bond between the carbon and carbon.

C. Rotation around carbon-carbon bond in ethane molecule is possible because of cylindrical symmetry of sigma (σ) bond between carbon-carbon atoms

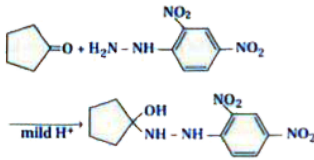
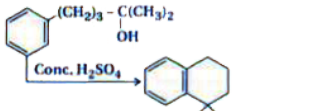
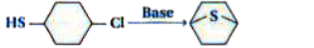
D. Rotation around carbon-carbon bond in ethane molecule is not possible, because ethane molecule contains both sigma (σ) bond and pi (π) bond between the carbon and carbon and ethane has very high boiling point

Answer: C



[View Text Solution](#)

59. Match Column-I with Column-II

Column-I	Column-II
<p>(A) </p>	<p>(P) Electrophilic Substitution</p> <p>(Q) Nucleophilic Substitution</p> <p>(R) Nucleophilic Addition</p>
<p>(B) </p>	
<p>(C) </p>	

A. A-P, B-Q, C-R

B. A-Q, B-R, C-P

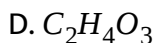
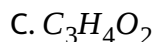
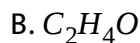
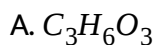
C. A-R, B-P, C-Q

D. A-R, B-Q, C-P

Answer: C

 [View Text Solution](#)

60. The ratio of mass percent of C and H of an organic compound ($C_XH_YO_Z$) is 6: 1. If one molecule of the above compound ($C_XH_YO_Z$) contains half as much oxygen as required to burn one molecule of compound C_XH_Y completely to CO_2 and H_2O . The empirical formula of compound $C_XH_YO_Z$ is.

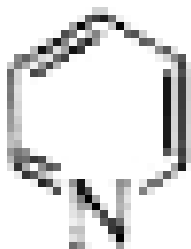


Answer: D



[View Text Solution](#)

61. Which of the following compound will be suitable for Kjeldahls method for nitrogen estimation?



A.



B.



C.

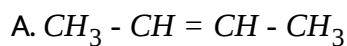


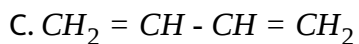
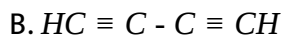
D.

Answer: B

 [View Text Solution](#)

62. Which of the following molecules represents the order of hybridisation sp^2 , sp^2 , sp , sp from left to right atoms?

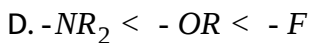
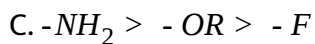
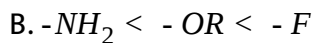
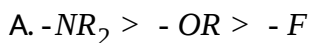




Answer: D

 [View Text Solution](#)

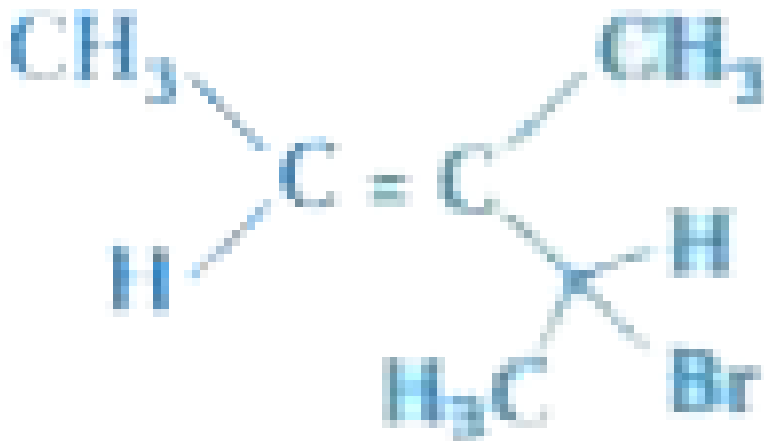
63. Which of the following is correct with respect to -I effect of the substituents? (R = alkyl)



Answer: A::B

 [View Text Solution](#)

64. What is the IUPAC name of the following compound ?



- A. 4-Bromo-3-methylpent-2-ene
- B. 2-Bromo-3-methylpent-3-ene
- C. 3-Bromo-3-methyl-1, 2-dimethylprop-1-ene
- D. 3-Bromo-1, 2-dimethylbut-1-ene

Answer: A

 [View Text Solution](#)

65. Which amongst the following is the strongest acid?



Answer: B



View Text Solution

66. The correct IUPAC name of the following compound is:



A. 5-chloro-4-methyl-1-nitrobenzene

- B. 2-methyl-5-nitro-1-chlorobenzene
- C. 3-chloro-4-methyl-1-nitrobenzene
- D. 2-chloro-1-methyl-4-nitrobenzene

Answer: D

 [View Text Solution](#)

67. A solution of m-chloroaniline, m-chlorophenol, m-chlorobenzoic acid in ethyl acetate was extracted initially with a saturated solution of NaHCO_3 to give fraction A, the leftover organic phase was extracted with dil. NaOH to give fraction B. The final organic layer was labelled as fraction C. Fractions A, B and C contains respectively.

- A. m-chlorobenzoic acid, m-chlorophenol and m-chloroaniline
- B. m-chlorophenol, m-chlorobenzoic acid and m-chloroaniline
- C. m-chloroaniline, m-chlorophenol and m-chlorobenzoic acid
- D. m-chlorobenzoic acid, m-chloroaniline and m-chlorophenol

Answer: A



[View Text Solution](#)

68. A flask contains a mixture of isohexane and 3-methylpentane. One of the liquids boils at 63°C while the other boils at 60°C . What is the best way to separate the two liquids and which one will be distilled out first?

- A. Fractional distillation, isohexane
- B. Simple distillation, 3-methylpentane
- C. Fractional distillation, 3-methylpentane
- D. Simple distillation, isohexane

Answer: A



[View Text Solution](#)

1. Which of the following is the correct IUPAC name ?

- A. 3-ethyl-4, 4-dimethylheptane
- B. 4, 4-dimethyl-3-ethylheptane
- C. 5-ethyl-4, 4-dimethylheptane
- D. 4, 4-bis(methyl)-3-ethylheptane

Answer: A

 [View Text Solution](#)

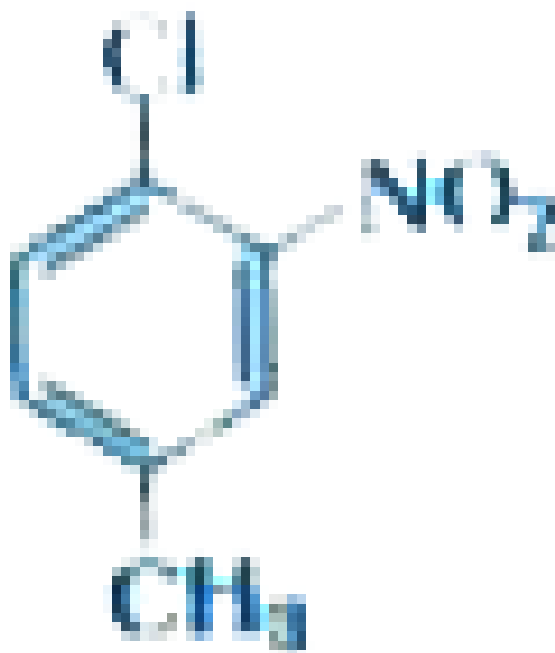
2. The IUPAC name for $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - CH_2 - \overset{\overset{O}{||}}{C} - OH$ is.....

- A. 1-hydroxypentane-1, 4-dione
- B. 1, 4-dioxopentanol
- C. 1-carboxybutan-3-one
- D. 4-oxopentanoic acid

Answer: D

[View Text Solution](#)

3. The IUPAC name for



A. 1-chloro-2-nitro-4-methylbenzene

B. 1-chloro-4-methyl-2-nitrobenzene

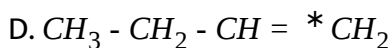
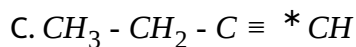
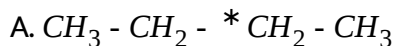
C. 2-chloro-1-nitro-5-methylbenzene

D. m-nitro-p-chlorotoluene

Answer: B

 [View Text Solution](#)

4. Electronegativity of carbon atoms depends upon their state of hybridisation. In which of the following compounds, the carbon marked with asterisk is most electronegative?



Answer: C

 [View Text Solution](#)

5. In which of the following, functional group isomerism is not possible?

- A. Alcohols
- B. Aldehydes
- C. Alkyl halides
- D. Cyanides

Answer: C



[View Text Solution](#)

6. The fragrance of flowers is due to the presence of some steam volatile organic compounds called essential oils. These are generally insoluble in water at room temperature but are miscible with water vapour in vapour phase. A suitable method for the extraction of these oils from the flowers is.....

- A. distillation
- B. crystallisation

C. Distillation under reduced pressure

D. Steam distillation

Answer: D



[View Text Solution](#)

7. During hearing of a court case, the judge suspected that some changes in the documents had been carried out. He asked the forensic department to check the ink used at two different places. According to you which technique can give the best results?

A. Column chromatography

B. Solvent extraction

C. Distillation

D. Thin layer chromatography

Answer: D



[View Text Solution](#)

8. The principle involved in paper chromatography is.....

- A. adsorption
- B. partition
- C. solubility
- D. volatility

Answer: B



[View Text Solution](#)

9. What is the correct order of decreasing stability of the following cations?



- A. $\text{II} > \text{I} > \text{III}$

B. $II > III > I$

C. $III > I > II$

D. $I > II > III$

Answer: A

 [View Text Solution](#)

10. Correct IUPAC name for $H_3C - CH | C_2H_5 - CH | C_2H_5 - CH_3$ is

A. 2-ethyl-3-methylpentane

B. 3, 4-dimethylhexane

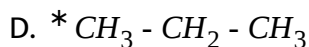
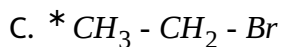
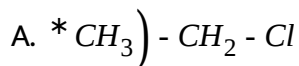
C. 2 sec-butylbutane

D. 2, 3-dimethylbutane

Answer: B

 [View Text Solution](#)

11. In which of the following compounds the carbon marked with asterisk is expected to have greatest positive charge?

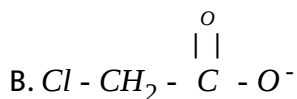
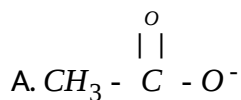


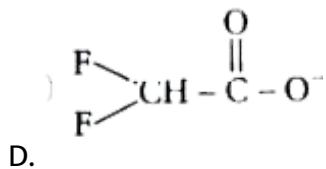
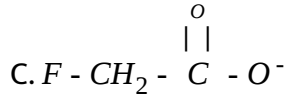
Answer: A



[View Text Solution](#)

12. Ionic species are stabilised by the dispersal of charge. Which of the following carboxyate ion is the most stable?





Answer: D

 [View Text Solution](#)

13. Electrophilic addition reactions proceed in two steps. The first step involves the addition of an electrophile. Name of type of intermediate formed in the first step of the following addition reaction .

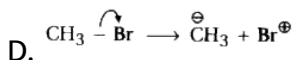
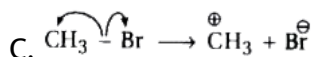
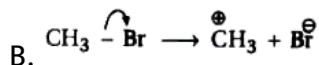
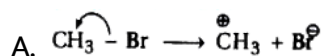


- A. 2° -carbanion
- B. 1° -carbocation
- C. 2° -carbocation
- D. 1° -carbanion

Answer: C

 [View Text Solution](#)

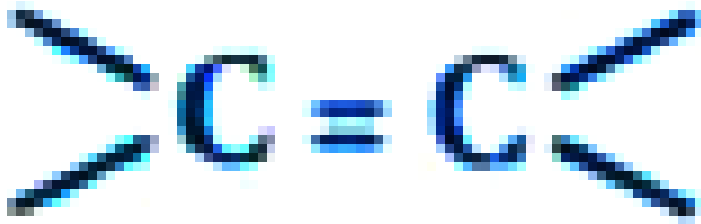
14. Covalent bond can undergo fission in two different ways. The correct representation involving a heterolytic fission of $CH_3 - Br$ is.....



Answer: B

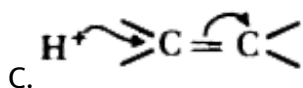
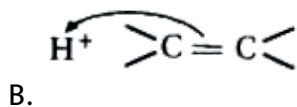
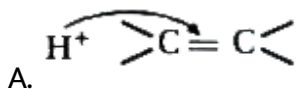
 [View Text Solution](#)

15. The addition of HCl to an alkene proceeds in two steps. The first step is the attack of the H^+ ion to



portion which

can be shown as.....



D. All of these are possible

Answer: B

[View Text Solution](#)

16. Which of the following is the correct IUPAC name ?

A. 3-ethyl-4, 4-dimethylheptane

B. 4, 4-dimethyl-3-ethylheptane

C. 5-ethyl-4, 4-dimethylheptane

D. 4, 4-bis(methyl)-3-ethylheptane

Answer: A

 [View Text Solution](#)

17. The IUPAC name for $CH_3 - \overset{\overset{O}{||}}{C} - CH_2 - CH_2 - \overset{\overset{O}{||}}{C} - OH$ is.....

A. 1-hydroxypentane-1, 4-dione

B. 1, 4-dioxopentanol

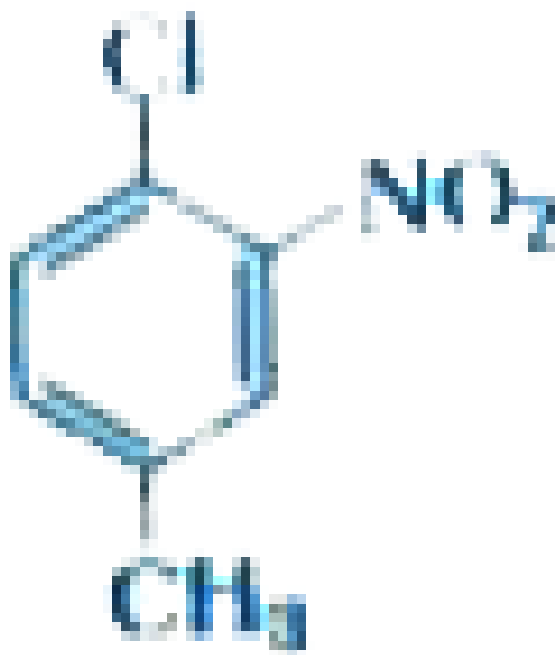
C. 1-carboxybutan-3-one

D. 4-oxopentanoic acid

Answer: D

 [View Text Solution](#)

18. The IUPAC name for



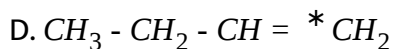
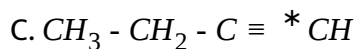
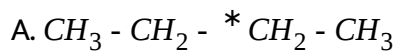
- A. 1-chloro-2-nitro-4-methylbenzene
- B. 1-chloro-4-methyl-2-nitrobenzene
- C. 2-chloro-1-nitro-5-methylbenzene
- D. m-nitro-p-chlorotoluene

Answer: B



[View Text Solution](#)

19. Electronegativity of carbon atoms depends upon their state of hybridisation. In which of the following compounds, the carbon marked with asterisk is most electronegative?



Answer: C



[View Text Solution](#)

20. In which of the following, functional group isomerism is not possible?

A. Alcohols

B. Aldehydes

C. Alkyl halides

D. Cyanides

Answer: C



[View Text Solution](#)

21. The fragrance of flowers is due to the presence of some steam volatile organic compounds called essential oils. These are generally insoluble in water at room temperature but are miscible with water vapour in vapour phase. A suitable method for the extraction of these oils from the flowers is.....

A. distillation

B. crystallisation

C. Distillation under reduced pressure

D. Steam distillation

Answer: D



[View Text Solution](#)

22. During hearing of a court case, the judge suspected that some changes in the documents had been carried out. He asked the forensic department to check the ink used at two different places. According to you which technique can give the best results?

- A. Column chromatography
- B. Solvent extraction
- C. Distillation
- D. Thin layer chromatography

Answer: D



[View Text Solution](#)

23. The principle involved in paper chromatography is.....

A. adsorption

B. partition

C. solubility

D. volatility

Answer: B

 [View Text Solution](#)

24. What is the correct order of decreasing stability of the following cations?



A. $II > I > III$

B. $II > III > I$

C. $III > I > II$

D. $I > II > III$

Answer: A

 [View Text Solution](#)

25. Correct IUPAC name for $H_3C - CH | C_2H_5 - CH | C_2H_5 - CH_3$ is

A. 2-ethyl-3-methylpentane

B. 3, 4-dimethylhexane

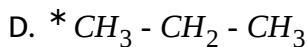
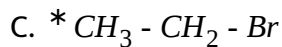
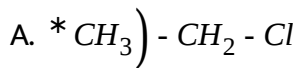
C. 2 sec-butylbutane

D. 2, 3-dimethylbutane

Answer: B

 [View Text Solution](#)

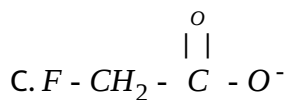
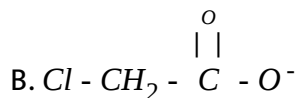
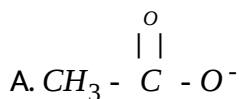
26. In which of the following compounds the carbon marked with asterisk is expected to have greatest positive charge?

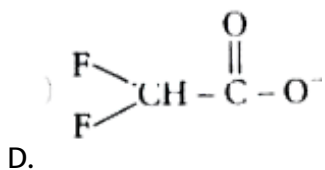


Answer: A

 [View Text Solution](#)

27. Ionic species are stabilised by the dispersal of charge. Which of the following carboxylate ion is the most stable?





Answer: D

 [View Text Solution](#)

28. Electrophilic addition reactions proceed in two steps. The first step involves the addition of an electrophile. Name of type of intermediate formed in the first step of the following addition reaction .



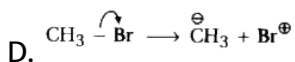
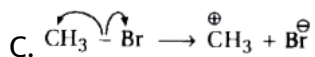
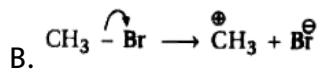
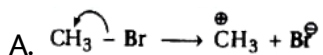
- A. 2° -carbanion
- B. 1° -carbocation
- C. 2° -carbocation
- D. 1° -carbanion

Answer: C



[View Text Solution](#)

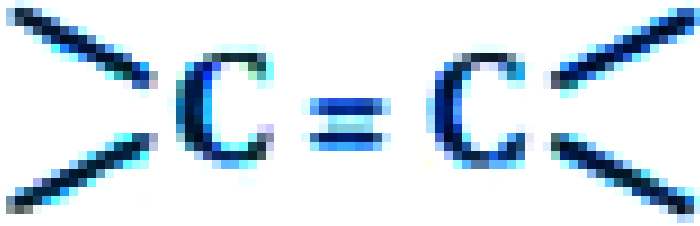
29. Covalent bond can undergo fission in two different ways. The correct representation involving a heterolytic fission of $CH_3 - Br$ is.....



Answer: B

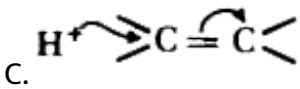
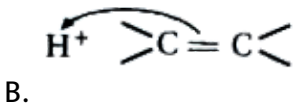
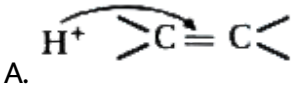
[View Text Solution](#)

30. The addition of HCl to an alkene proceeds in two steps. The first step is the attack of H^+ ion to



portion which

can be shown as.....



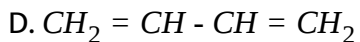
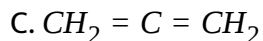
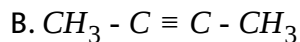
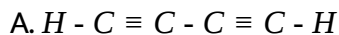
D. All of these are possible

Answer: B

 [View Text Solution](#)

Section -D -Multiple Choice Questions (MCQs)

1. Which of the following compounds contain after the carbon atoms in the same hybridisation state?

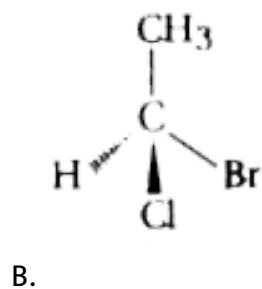
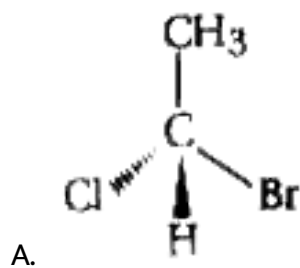
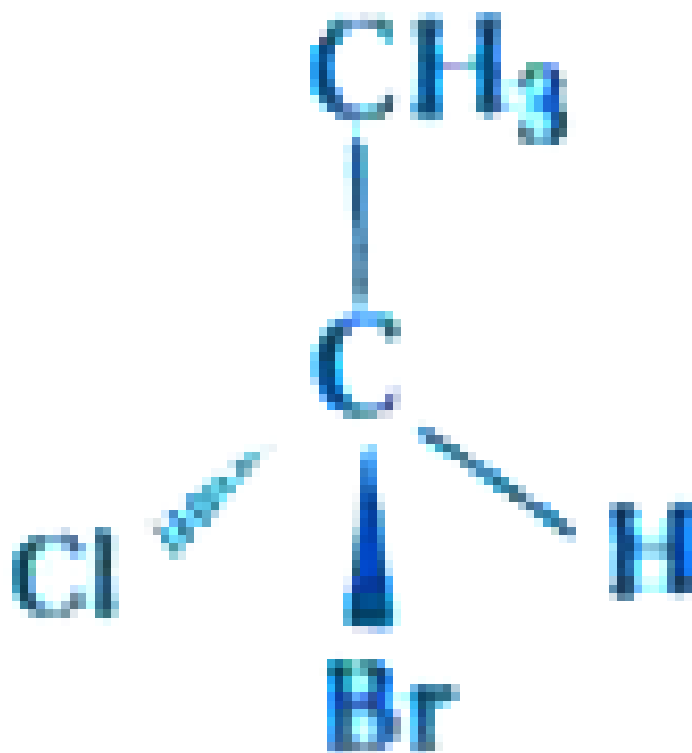


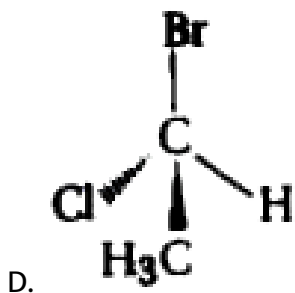
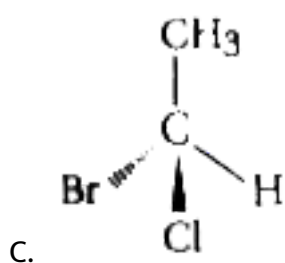
Answer: A::D



[View Text Solution](#)

2. In which of the following representation given below spatial arrangement of group/atom different from that given in structure (a)?

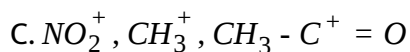
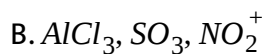


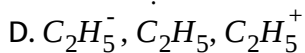


Answer: A::C::D

[View Text Solution](#)

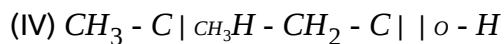
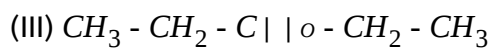
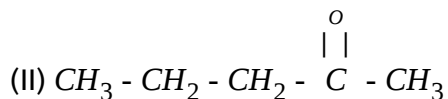
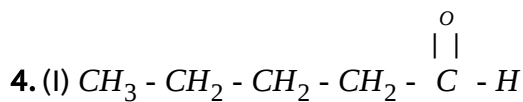
3. Electrophiles are electron seeking species. Which of the following groups contain only electrophiles?





Answer: B::C

 View Text Solution



Which of the following pairs are position isomers?

A. I and II

B. II and III

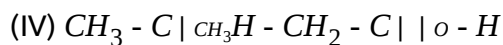
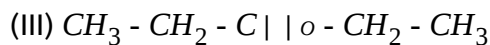
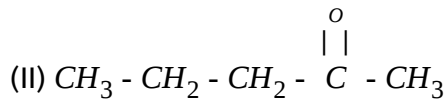
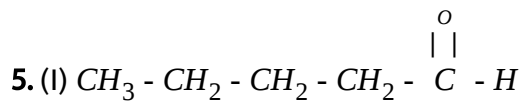
C. II and IV

D. III and IV

Answer: B



View Text Solution



Which of the following pairs are not functional group isomers?

A. II and III

B. II and IV

C. I and IV

D. I and II

Answer: A::C



View Text Solution

6. Nucleophilie is a species that should have.....

A. a pair of electrons to donate

B. positive charge

C. negative charge

D. electron deficient species

Answer: A::C



[View Text Solution](#)

7. Hyperconjugation involves delocalisation of

A. electrons of carbon-hydrogen bond of an alkyl group directly attached to an atom of unsaturated carbon

B. electrons of carbon-hydrogen bond of alkyl group directly attached to the positively charged carbon atom

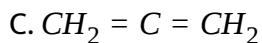
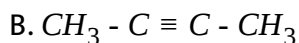
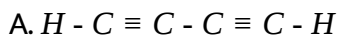
C. π electrons of carbon-carbon bond

D. lone pair of electrons

Answer: A::B

 [View Text Solution](#)

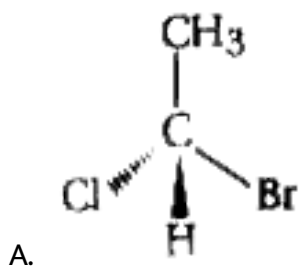
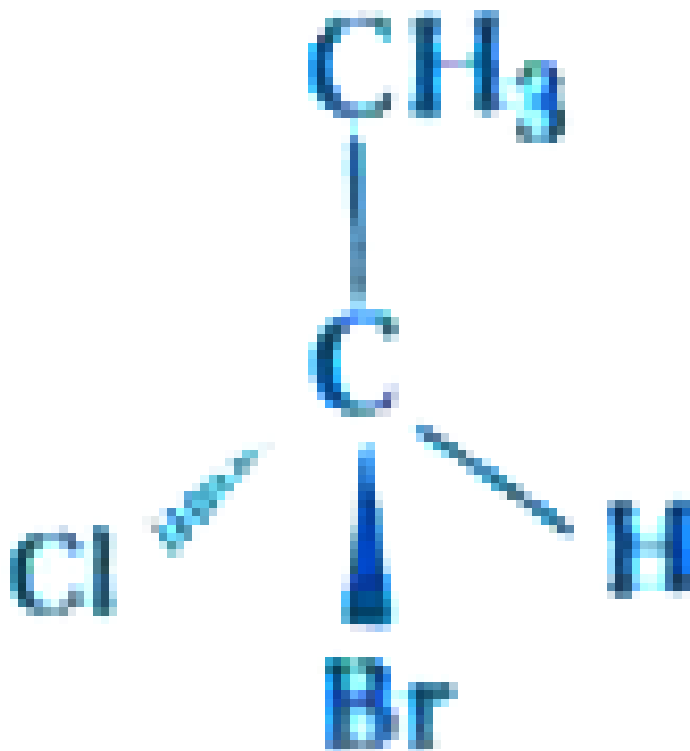
8. Which of the following compounds contain after the carbon atoms in the same hybridisation state?

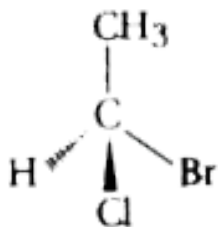


Answer: A::D

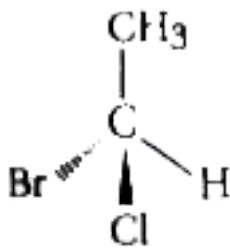
 [View Text Solution](#)

9. In which of the following representation given below spatial arrangement of group/atom different from that given in structure (a)?

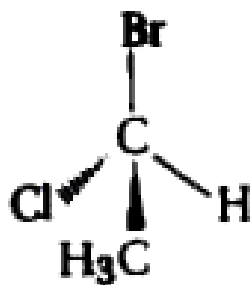




B.



C.

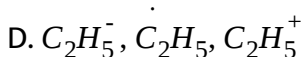
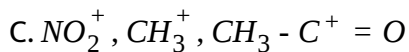
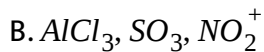


D.

Answer: A::C::D

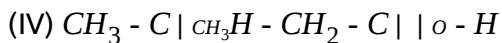
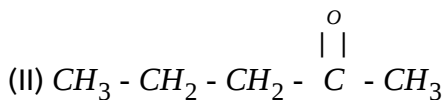
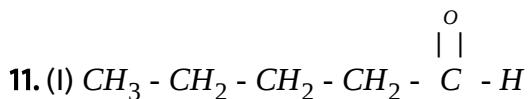
 [View Text Solution](#)

10. Electrophiles are electron seeking species. Which of the following groups contain only electrophiles?



Answer: B::C

 [View Text Solution](#)



Which of the following pairs are position isomers?

A. I and II

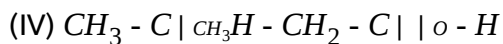
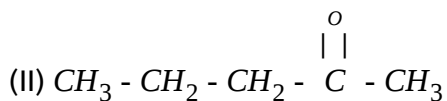
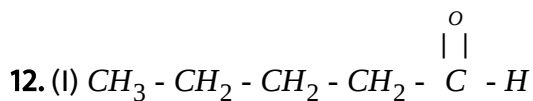
B. II and III

C. II and IV

D. III and IV

Answer: B

 [View Text Solution](#)



Which of the following pairs are not functional group isomers?

A. II and III

B. II and IV

C. I and IV

D. I and II

Answer: A::C



View Text Solution

13. Nucleophilic is a species that should have.....

- A. a pair of electrons to donate
- B. positive charge
- C. negative charge
- D. electron deficient species

Answer: A::C



View Text Solution

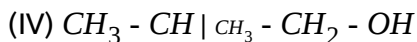
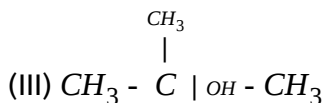
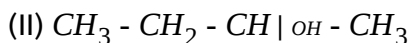
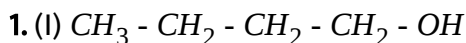
14. Hyperconjugation involves delocalisation of

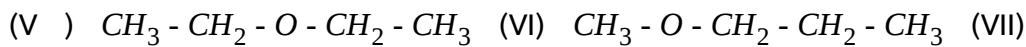
- A. electrons of carbon-hydrogen bond of an alkyl group directly attached to an atom of unsaturated carbon
- B. electrons of carbon-hydrogen bond of alkyl group directly attached to the positively charged carbon atom
- C. π electrons of carbon-carbon bond
- D. lone pair of electrons

Answer: A::B

 [View Text Solution](#)

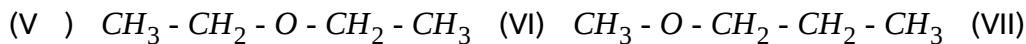
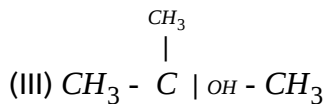
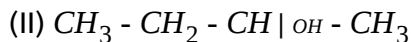
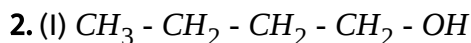
Section -D -Short Answer Type





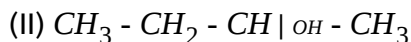
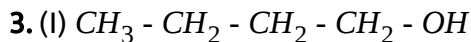
Which of the above compounds form pairs of metamers?

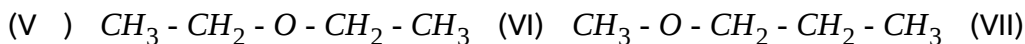
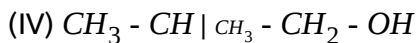
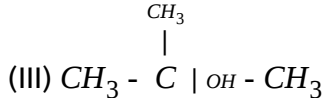
 [View Text Solution](#)



Identify the pairs of compounds which are functional group isomers

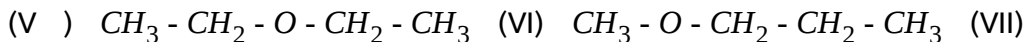
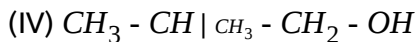
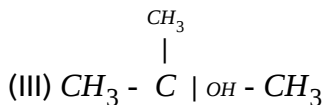
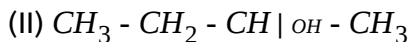
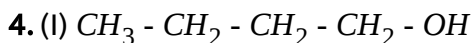
 [View Text Solution](#)





Identify the pairs of compounds that represents position isomerism

 [View Text Solution](#)



Identify the pairs of compounds that represents chain isomerism

 [View Text Solution](#)

5. For testing halogens in an organic compound with $AgNO_3$ solution, sodium extract (Lassaigne's test) is acidified with dilute HNO_3 . What will happen if a student acidifies the extract with dilute H_2SO_4 in place of dilute HNO_3 ?

 [View Text Solution](#)

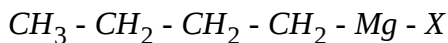
6. What is the hybridisation of each carbon in $H_2C = C = CH_2$?

 [View Text Solution](#)

7. Explain, how is the electronegativity of carbon atoms related to their state of hybridisation in an organic compound?

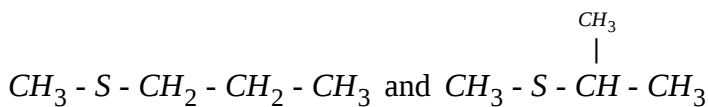
 [View Text Solution](#)

8. Show the polarisation of carbon-magnesium bond in the following structure.



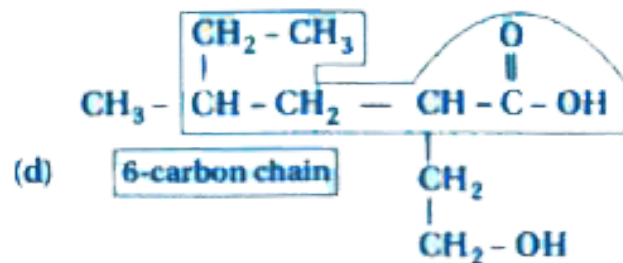
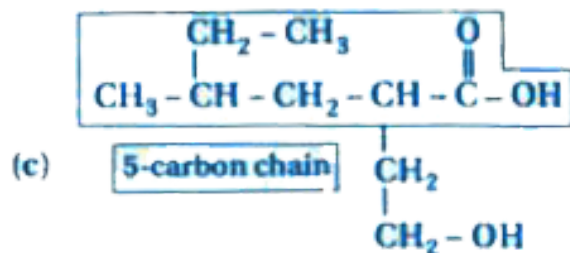
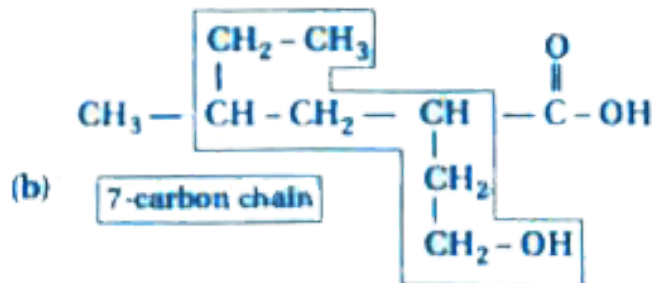
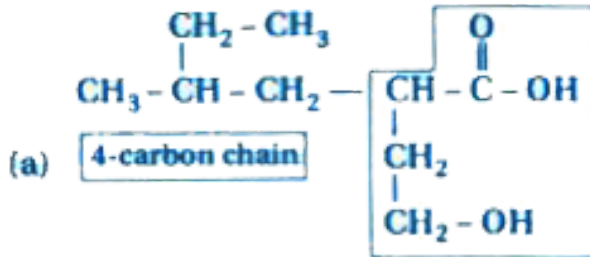
 [View Text Solution](#)

9. Compounds with same molecular formula but differing in their structure are said to be structural isomers. What type of structural isomerism is shown by.....



 [View Text Solution](#)

10. Which of the following selected chain is correct to name the given compound according to IUPAC system?



 [View Text Solution](#)

11. In DNA and RNA, nitrogen atom is present in the ring system. Can Kjeldahl Method be used for the estimation of nitrogen present in these?

 [View Text Solution](#)

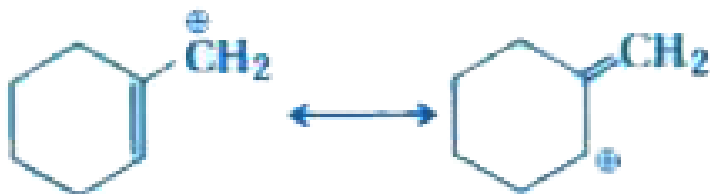
12. If a liquid compound decomposes at its boiling point, which method (s) can you choose for its purification. It is known that the compound is stable at low pressure, steam volatile and insoluble in water

 [View Text Solution](#)

13. Draw the possible resonance structures for $CH_3 - \overset{\cdot\cdot}{O} - \overset{+}{CH_2}$ and predict which of the structures is more stable. Give reason for your answer.

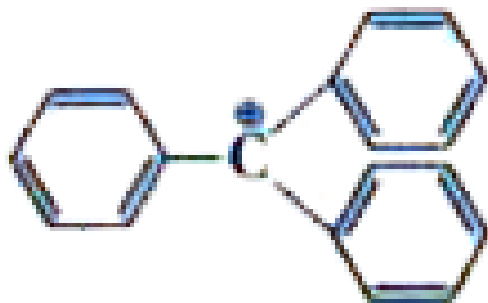
 [View Text Solution](#)

14. Which of the following ions is more stable? Use resonance to explain your answer



[View Text Solution](#)

15. The structure of triphenylmethyl cation is given below. This is very stable and some of its salts can be stored for months. Explain the cause of high stability of this cation



[View Text Solution](#)

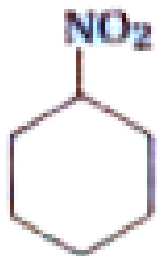
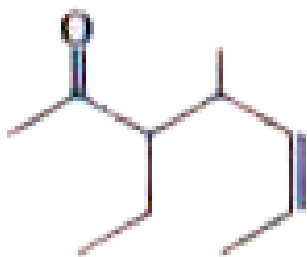
16. Write structures of various carbocations that can be obtained from 2-methylbutane. Arrange these carbocation in order of increasing stability

 [View Text Solution](#)

17. Three students, Manish, Ramesh and Rajni were determining the extra elements present in an organic compound given by their teacher. They prepared the Lassaigne's extract (L.E) independently by the fusion of the compound with sodium metal. Then they added solid $FeSO_4$ and dilute sulphuric acid to a part of Lassaigne's extract. Manish and Rajni obtained prussian blue colour but Ramesh got red colour. Ramesh repeated the test with the same Lassaigne's extract, but again got red colour only They were surprised and went to their teacher and told him about their observation. Teacher asked them to think over the reason for this. Can you help them by giving the reason for this observation. Also, write the chemical equations to explain the formation of compounds of different colours

 [View Text Solution](#)

18. Name the compounds whose line formulae are given below



[View Text Solution](#)

19. Write structural formulae for compounds names as

(a) 1-bromoheptane (b) 5-bromoheptanoic acid

[View Text Solution](#)

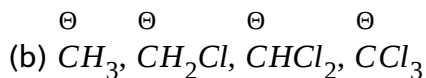
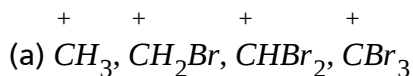
20. Draw the resonance structures of the following compounds.

(a) $CH_2 = CH = \overset{\cdot\cdot}{C} \dots l:$ (b) $CH_2 = CH - CH = CH_2$ (c))

$CH_2 = CH - C|_H = O$

[View Text Solution](#)

21. Identify the most stable species in the following set of ions giving reasons.



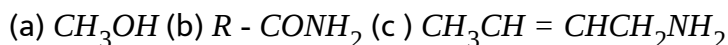
 [View Text Solution](#)

22. Give three points of difference between inductive effect and resonance effect

 [View Text Solution](#)

23. Which of the following compounds will not exist as resonance hybrid?

Give reason for your answer.

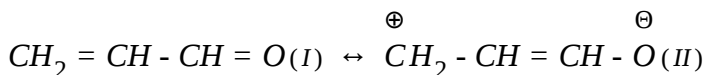


 [View Text Solution](#)

24. Why does SO_3 act as an electrophile?

 [View Text Solution](#)

25. Resonance structures of propenat are give below. Which of these resonating structures is more stable? Give reason for your answer.



 [View Text Solution](#)

26. By mistake, an alcohol (boiling point $97^{\circ}C$) was mixed with a hydrocarbon (boiling point $68^{\circ}C$). Suggest a suitable method to separate the two compounds. Explain the reason for your choice.

 [View Text Solution](#)

27. Which of the two structures (A) and (B) given below is more stabilised by resonance. Explain (A) CH_3COOH (B) CH_3COO^-

 [View Text Solution](#)

28. (I) $CH_3 - CH_2 - CH_2 - CH_2 - OH$

(II) $CH_3 - CH_2 - CH |_{OH} - CH_3$

(III) $CH_3 - \overset{CH_3}{\underset{|}{C}} |_{OH} - CH_3$

(IV) $CH_3 - CH |_{CH_3} - CH_2 - OH$

(V) $CH_3 - CH_2 - O - CH_2 - CH_3$ (VI) $CH_3 - O - CH_2 - CH_2 - CH_3$ (VII)

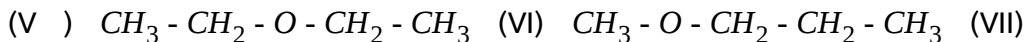
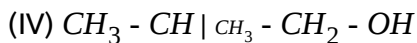
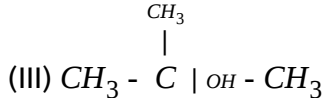
$CH_3 - O - CH |_{CH_3} - CH_3$

Which of the above compounds form pairs of metamers?

 [View Text Solution](#)

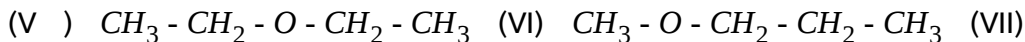
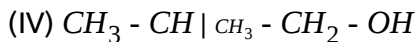
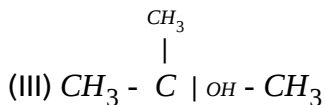
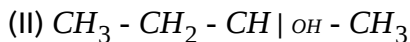
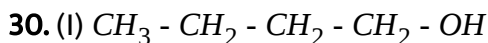
29. (I) $CH_3 - CH_2 - CH_2 - CH_2 - OH$

(II) $CH_3 - CH_2 - CH |_{OH} - CH_3$



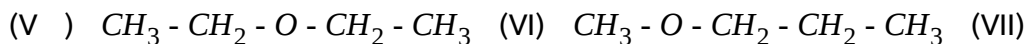
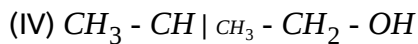
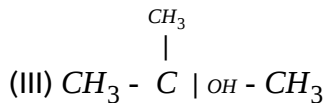
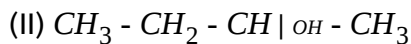
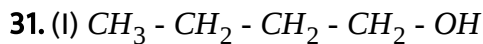
Identify the pairs of compounds which are functional group isomers

 [View Text Solution](#)



Identify the pairs of compounds that represents position isomerism

 [View Text Solution](#)



Identify the pairs of compounds that represents chain isomerism

 [View Text Solution](#)

32. For testing halogens in an organic compound with $AgNO_3$ solution, sodium extract (Lassaigne's test) is acidified with dilute HNO_3 . What will happen if a student acidifies the extract with dilute H_2SO_4 in place of dilute HNO_3 ?

 [View Text Solution](#)

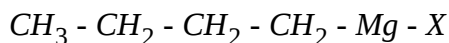
33. What is the hybridisation of each carbon in $H_2C = C = CH_2$?

 [View Text Solution](#)

34. Explain, how is the electronegative of carbon atoms related to their state of hybridisation in an organic compound?

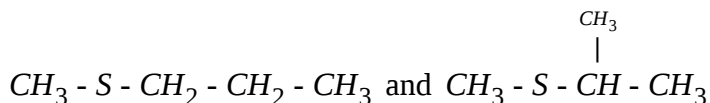
 [View Text Solution](#)

35. Show the polarisation of carbon -magnesium bond in the following structure.

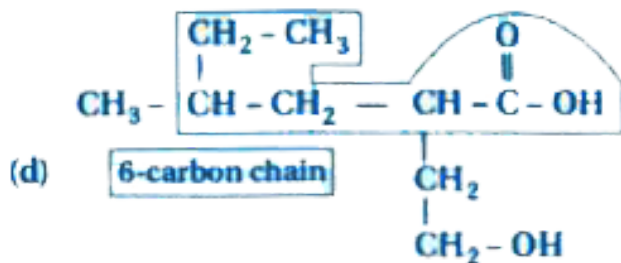
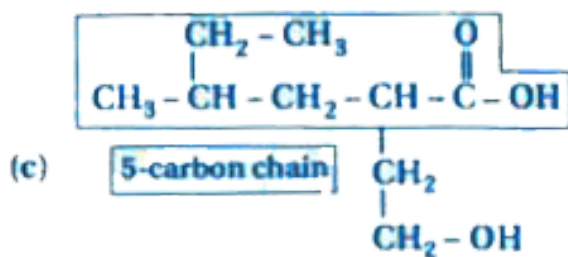
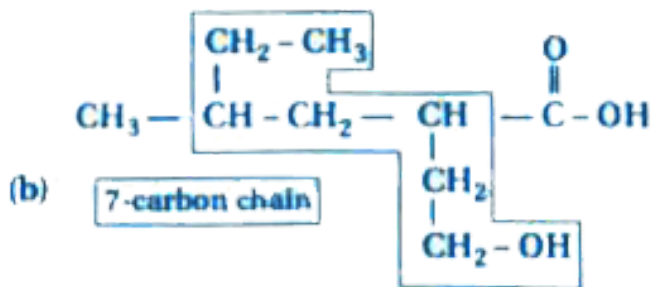
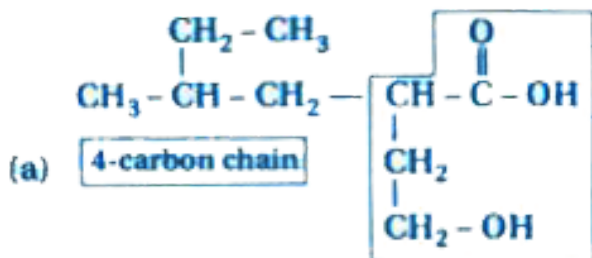


 [View Text Solution](#)

36. Compounds with same molecular formula but differing in their structure are said to be structural isomers. What type of structural isomerism is shown by.....



37. Which of the following selected chain is correct to name the given compound according to IUPAC system?





[View Text Solution](#)

38. In DNA and RNA, nitrogen atom is present in the ring system. Can Kjeldahl Method be used for the estimation of nitrogen present in these?



[View Text Solution](#)

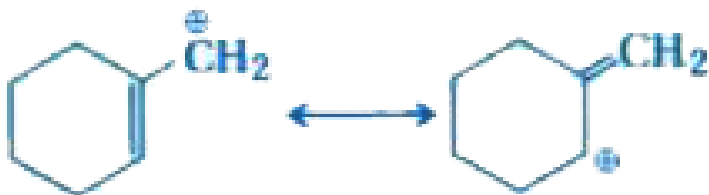
39. If a liquid compound decomposes at its boiling point, which method (s) can you choose for its purification. It is known that the compound is stable at low pressure, steam volatile and insoluble in water



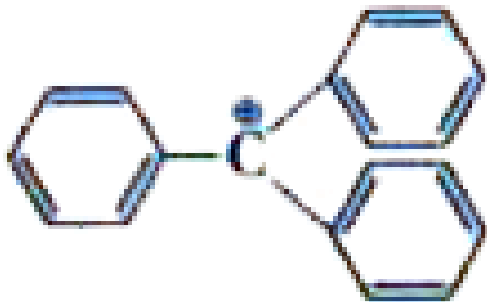
[View Text Solution](#)

40. Draw the possible resonance structures for $CH_3 - \overset{\cdot\cdot}{O} - \overset{+}{CH_2}$ and predict which of the structures is more stable. Give reason for your answer.

41. Which of the following ions is more stable? Use resonance to explain your answer



42. The structure of triphenylmethyl cation is given below. This is very stable and some of its salts can be stored for months. Explain the cause of high stability of this cation





[View Text Solution](#)

43. Write structures of various carbocations that can be obtained from 2-methylbutane. Arrange these carbocation in order of increasing stability



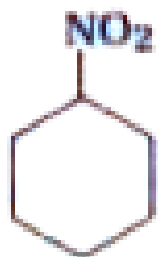
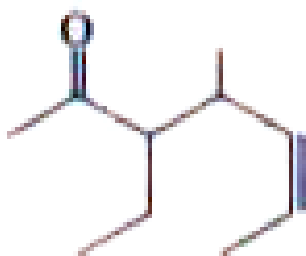
[View Text Solution](#)

44. Three students, Manish, Ramesh and Rajni were determining the extra elements present in an organic compound given by their teacher. They prepared the Lassaigne's extract (L.E) independently by the fusion of the compound with sodium metal. Then they added solid $FeSO_4$ and dilute sulphuric acid to a part of Lassaigne's extract. Manish and Rajni obtained prussian blue colour but Ramesh got red colour. Ramesh repeated the test with the same Lassaigne's extract, but again got red colour only They were surprised and went to their teacher and told him about their observation. Teacher asked them to think over the reason for this. Can you help them by giving the reason for this observation. Also, write the

chemical equations to explain the formation of compounds of different colours

[View Text Solution](#)

45. Name the compounds whose line formulae are given below



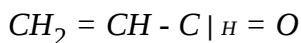
[View Text Solution](#)

46. Write structural formulae for compounds names as

(a) 1-bromoheptane (b) 5-bromoheptanoic acid

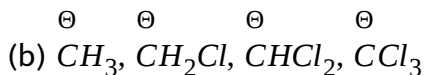
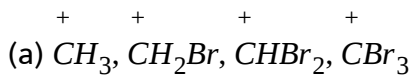
[View Text Solution](#)

47. Draw the resonance structures of the following compounds.



 [View Text Solution](#)

48. Identify the most stable species in the following set of ions giving reasons.



 [View Text Solution](#)

49. Give three points of difference between inductive effect and resonance effect

 [View Text Solution](#)

50. Which of the following compounds will not exist as resonance hybrid?

Give reason for your answer.

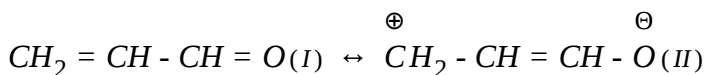
(a) CH_3OH (b) $R - CONH_2$ (c) $CH_3CH = CHCH_2NH_2$

 [View Text Solution](#)

51. Why does SO_3 act as an electrophile?

 [View Text Solution](#)

52. Resonance structures of propenat are give below. Which of these resonating structures is more stable? Give reason for your answer.



 [View Text Solution](#)

53. By mistake, an alcohol (boiling point 97°C) was mixed with a hydrocarbon (boiling point 68°C). Suggest a suitable method to separate the two compounds. Explain the reason for your choice.

 [View Text Solution](#)

54. Which of the two structures (A) and (B) given below is more stabilised by resonance. Explain (A) CH_3COOH (B) CH_3COO^-

 [View Text Solution](#)

Section -D - Matching the Columns

1. Match the type of mixture of compounds in Column-I with the technique of separation/purification given in Column-II



 [View Text Solution](#)

2. Match the terms mentioned in Column-I with the terms in Column-II



[View Text Solution](#)

3. Match Column-I with Column-II



[View Text Solution](#)

4. Match the intermediates given in Column-I with their probable structure in Column-II



[View Text Solution](#)

5. Match the ions given in Column-I with their nature given in Column-II



 [View Text Solution](#)

6. Match the type of mixture of compounds in Column-I with the technique of separation/purification given in Column-II



 [View Text Solution](#)

7. Match the terms mentioned in Column-I with the terms in Column-II



 [View Text Solution](#)

8. Match Column-I with Column-II



 [View Text Solution](#)

9. Match the intermediates given in Column-I with their probable structure in Column-II



 [View Text Solution](#)

10. Match the ions given in Column-I with their nature given in Column-II



 [View Text Solution](#)

1. Assertion (A) : Simple distillation can help in separating a mixture of propan-1-ol (boiling point 97°C) and propanone (b.p 56°C).

Reason (R) : Liquids with a difference of more than 20°C in their boiling points can be separated by simple distillation

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: A



[View Text Solution](#)

2. Assertion (A): Energy of resonance hybrid is equal to the average of energies of all canonical forms.

Reason (R): Resonance hybrid cannot be presented by a single structure.

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: D



View Text Solution

3. Assertion (A): Pent-1-ene and pent-2-ene are position isomers

Reason (R): Position isomers differ in the position of functional group or a substituent.

- A. Both (A) and (R) are correct and (R) is the correct explanation of (A)
- B. Both (A) and R are correct but (R) is not the correct explanation of (A)
- C. Both (A) and (R) are not correct
- D. (A) is not correct but (R) is correct

Answer: A

 [View Text Solution](#)

4. Assertion (A): All the carbon atoms in $H_2C = C = CH_2$ are sp^2 -hybridised

Reason (R): In this molecule all the carbon atoms are attached to each other by double bonds.

- A. Both (A) and (R) are correct and (R) is the correct explanation of (A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: D

 [View Text Solution](#)

5. Assertion (A): Sulphur present in an organic compound can be estimated quantitatively by Carius method.

Reason (R): Sulphur is separated easily from other atoms in the molecule and gets precipitated as light yellow solid

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: B



[View Text Solution](#)

6. Assertion (A): Components of a mixture of red and blue inks can be separated by distributing the components between stationary and mobile phases in paper chromatography.

Reason (R): The coloured components of inks migrate at different rates because paper selectively retains different components according to the difference in their partition between the two phases

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: A

 [View Text Solution](#)

7. Assertion (A) : Simple distillation can help in separating a mixture of propan-1-ol (boiling point 97°C) and propanone (b.p 56°C).

Reason (R) : Liquids with a difference of more than 20°C in their boiling points can be separated by simple distillation

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: A

 [View Text Solution](#)

8. Assertion (A): Energy of resonance hybrid is equal to the average of energies of all canonical forms.

Reason (R): Resonance hybrid cannot be presented by a single structure.

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: D

 [View Text Solution](#)

9. Assertion (A): Pent-1-ene and pent-2-ene are position isomers

Reason (R): Position isomers differ in the position of functional group or a substituent.

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: A



[View Text Solution](#)

10. Assertion (A): All the carbon atoms in $H_2C = C = CH_2$ are sp^2 -hybridised

Reason (R): In this molecule all the carbon atoms are attached to each other by double bonds.

A. Both (A) and (R) are correct and (R) is the correct explanation of

(A)

B. Both (A) and R are correct but (R) is not the correct explanation of

(A)

C. Both (A) and (R) are not correct

D. (A) is not correct but (R) is correct

Answer: D



[View Text Solution](#)

11. Assertion (A): Sulphur present in an organic compound can be estimated quantitatively by Carius method.

Reason (R): Sulphur is separated easily from other atoms in the molecule and gets precipitated as light yellow solid

- A. Both (A) and (R) are correct and (R) is the correct explanation of (A)
- B. Both (A) and R are correct but (R) is not the correct explanation of (A)
- C. Both (A) and (R) are not correct
- D. (A) is not correct but (R) is correct

Answer: B



[View Text Solution](#)

12. Assertion (A): Components of a mixture of red and blue inks can be separated by distributing the components between stationary and mobile phases in paper chromatography.

Reason (R): The coloured components of inks migrate at different rates because paper selectively retains different components according to the difference in their partition between the two phases

- A. Both (A) and (R) are correct and (R) is the correct explanation of (A)
- B. Both (A) and R are correct but (R) is not the correct explanation of (A)
- C. Both (A) and (R) are not correct
- D. (A) is not correct but (R) is correct

Answer: A

 [View Text Solution](#)

Section -D - Long Answer Type

1. What is meant by hybridisation ? Compound $CH_2 = C = CH_2$ contains sp or sp^2 -hybridised carbon atoms. Will it be a planar molecule ?

 [View Text Solution](#)

2. Benzoic acid is an organic compound. Its crude sample can be purified by crystallisation from hot water. What characteristic differences in the properties of benzoic acid and the impurity make this process of purification suitable?

 [View Text Solution](#)

3. Two liquids (A) and (B) can be separated by the method of fractional distillation. The boiling point of liquid (A) is less than boiling point of Liquid (B). Which of the liquids do you expect to come out first in the distillate? Explain

 [View Text Solution](#)

4. You have a mixture of three liquids A, B and C. There is a large difference in the boiling points of A and rest of the two liquids i.e., B and C. Boiling point of liquids B and C are quite close. Liquid A boils at a higher temperature than B and C and boiling point B is lower than C. How

will you separate the components of the mixture. Draw a diagram showing set up of the apparatus for the process

 [View Text Solution](#)

5. Draw a diagram of bubble plate type fractionating column. When do we require such type of a column for separating two liquids. Explain the principle involved in the separation of components of a mixture of liquids by using fractionating column. What industrial applications does this process have ?

 [View Text Solution](#)

6. A liquid with high boiling point decomposes on simple distillation but it can be steam distilled for its purification. Explain how is it possible?

 [View Text Solution](#)

7. What is meant by hybridisation ? Compound $CH_2 = C = CH_2$ contains sp or sp^2 -hybridised carbon atoms. Will it be a planar molecule ?

 [View Text Solution](#)

8. Benzoic acid is an organic compound. Its crude sample can be purified by crystallisation from hot water. What characteristic differences in the properties of benzoic acid and the impurity make this process of purification suitable?

 [View Text Solution](#)

9. Two liquids (A) and (B) can be separated by the method of fractional distillation. The boiling point of liquid (A) is less than boiling point of Liquid (B). Which of the liquids do you expect to come out first in the distillate ? Explain

 [View Text Solution](#)

10. You have a mixture of three liquids A, B and C. There is a large difference in the boiling points of A and rest of the two liquids i.e., B and C. Boiling point of liquids B and C are quite close. Liquid A boils at a higher temperature than B and C and boiling point B is lower than C. How will you separate the components of the mixture. Draw a diagram showing set up of the apparatus for the process

 [View Text Solution](#)

11. Draw a diagram of bubble plate type fractionating column. When do we require such type of a column for separating two liquids. Explain the principle involved in the separation of components of a mixture of liquids by using fractionating column. What industrial applications does this process have ?

 [View Text Solution](#)

12. A liquid with high boiling point decomposes on simple distillation but it can be steam distilled for its purification. Explain how is it possible?



View Text Solution