CHEMISTRY

BOOKS - DISHA CHEMISTRY (HINGLISH)

ORGANIC CHEMISTRY - SOME BASIC PRINCIPLES AND TECHNIQUES

Mcqs

1. The correct decreasing order of priority for the functional groups of organic compounds in the IUPAC system of nomenclature is

A. $-COOH, \ -SO_3H, \ -CONH_2, \ -CHO$

B. $-SO_3H, \ -COOH, \ -CONH_2, \ -CHO$

C. $-CHO,_C OOH, \ -SO_3H, \ -CONH_2$

D. $-CONH_2, \ -CHO, \ -SO_3H, \ -COOH$

Answer: A

Watch Video Solution

2. The IUPAC name of the compound

A. 1,2,3 -triformylpropane

B. Propane-1,2,3-Tricarbaldehyde

C. 3-formyl-1, 5-pentanedial

D. Propane-1,2,3-trial

Answer: B

View Text Solution

3. Vinylcarbinol is

A. $HO - CH_2 - CH = CH_2$

B. $CH_2C(OH) + CH_2$

C. $CH_3 - CH = CH - OH$

D. $CH_3 - C(CH_2OH) = CH_2$

Answer: A

View Text Solution

4. The stability of the compounds 

A. $(iv) > (iii) > (i) > (ii)$

B. $(i) > (iii) > (ii) > (iv)$

C. $(ii) > (iii) > (i) > (iv)$

D. $(iv) > (i) > (iii) > (ii)$

Answer: A

View Text Solution

5. Fractional distillation is used when

A. there is a large difference in the boiling points of liquids

B. there is a small difference in the boiling points liquids

C. boiling points of liquid are same

D. liquids form a constant boiling mixture

Answer: B

View Text Solution

6. Rate of the reaction 

is fastest when Z is

A. OC_2H_5

B. NH_3

C. Cl^-

D. $OCOCH_3$

Answer: C

View Text Solution

7. The order of activity of the various O- and P-director is

A.

$$-O^- > -Oh > -OCOCH_3 > -COCH_3$$

B.

$$-Oh > -O^- > -OCOCH_3 > -COCH_3$$

C.

$$-Oh > -O^- > -COCH_3 > -OCOCH_3$$

D.

$$-O^- > -COCH_3 > -OCOCH_3 > -OH$$

Answer: A

View Text Solution

8. The general formula $C_nH_{2n}O_2$ could be for open chain

A. Carboxylic acids

B. diols

C. dialdehydes

D. diketones

Answer: A

View Text Solution

9. 

The product would be

A. a racemate

B. optically active

C. a meso compound

D. a mixture of diastereomers

Answer: A

View Text Solution

10. The number of possible open chain (acyclic) isomeric compounds for molecular formula C_5H_{10} would be

A. 8

B. 7

C. 6

D. 5

Answer: C

View Text Solution

11. Which one of the following is the stablest structure of cyclohexatriene?

A. Chain form

B. Boat form

C. Half chair form

D. Planar form

Answer: D

View Text Solution

12. The compound formed in the positive test for nitrogen with the Lassaigne solution of an organic compound is

A. $Fe_4\left[Fe(CN)_6\right]_3$

B. $Na_3\left[Fe(CN)_6\right]$

C. $Fe(CN)_3$

D. $Na_4\left[Fe(CN)_5NOS\right]$

Answer: A

View Text Solution

View Text Solution

13. 2.79g of an organic compound when heated in Carius tube with conc.HNO_3 and H_3PO_4 formed converted into $MgNH_4 \cdot PO_4$ ppt. The ppt. on heating gave 1.332 g of $Mg_2P_2O_7$. The percentage of P in the compound is

A. $23.3\ \%$

B. $13.33\ \%$

C. $33.33\ \%$

D. $26.66\ \%$

Answer: B

View Text Solution

14. The accepted IUPAC name of the camphor is

A. 1.7.7-trimethyl bicyclo[2.2.1] heptan-2-one

B. 1.7.7-trimethyl bicyclo[2.1.2] heptan-2-one

C. 1.2.2-trimethyl bicyclo[2.2.1] heptan-6-one

D. None of these

Answer: A

View Text Solution

15. The pair of structure given below represent 

A. enantiomers

B. diastereomers

C. structural isomers

D. two molecules of the same compound.

Answer: C

View Text Solution

16. Which of the following exhibits geometrical isomerism?

A. C_2H_5Br

B. $(CH)_2(COOH)_2$

C. CH_3CHO

D. $(CH_2)_2(COOH)_2$

Answer: B

View Text Solution

17. Chlorine in vinyl chloride is less reactive because

A. sp^2-hybridised carbon has more acidic character than sp^3-hybridised carbon

B. C-Cl bond develops partial double bond character

C. of rasonance

D. All are correct

Answer: C

View Text Solution

18. The best methof for the separetion of naphthalene and benzoic acid from their mixture is,

A. distillation

B. sublimation

C. chromatography

D. crystallisation

Answer: B

View Text Solution

19. The percentage of sulphur in an organic compound whose 0.32g produces 0.233g of $BaSO_4$ [At. Wt. Ba=137, S=32] is

A. 1.0

B. 10.0

C. 23.5

D. 32.1

Answer: B

View Text Solution

20. Indicate the wrongly named compound

A. $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - CH_2 - CH_2 - CHO$

(4-methyl-1-pentanal)

B. $CH_3 - \underset{\underset{CH_3}{|}}{C}\ H - C \equiv C - COOH$

(4-methyl-2-pentyne-1-oic acid)

C. $CH_3CH_2CH_2 - \underset{\underset{CH_3}{|}}{C}\ H - COOH$

(2-methyl-1-pentanoic acid)

D. $CH_3 - CH_2 - CH = CH - \overset{\overset{O}{||}}{C} - CH_3$

(3-hexen-5-one)

Answer: D

View Text Solution

21. The (R-) and (S-) enantiomers of an optically active compound differ in

A. their reactivity with achiral reagents

B. their optical rotation of plane polarized light

C. their melting points

D. None of these

Answer: B

View Text Solution

22. But-2-ene exhibits cis-trans-isomerism due to

A. rotaion around $C_3 - C_4$ sigma bond

B. restricted rotation around C=C bond

C. rotation around $C_1 - C_2$ bond

D. rotation around $C_2 - C_3$ double bond

Answer: B

View Text Solution

23. Which of the following compounds undergoes nucleophilic substance reaction most easily?

A. 

B. 

C. 

D. 

Answer: A

View Text Solution

24. An organic compound contains $C = 40\,\%$, $H = 13.33\,\%$ and $N = 46.67\,\%$. Its empirical formula would be

A. CHN

B. C_2H_2N

C. CH_3N

D. C_3H_2N

Answer: C

View Text Solution

25. The IUPAC name of the compound

$$CH_3 - \overset{\overset{CH_3}{|}}{C}H - \overset{\overset{O}{||}}{C} - CH_2 - CH_2OH \text{ is}$$

A. 1-Hydroxy-4-methyl-3-pentanone

B. 2-Methyl-5-hydoxy-3-pentanone

C. 4-Methyl-3-oxo-1-pentanol

D. Hexanol-1-one-3

Answer: A

View Text Solution

26. An important chemical method to resolve a racemic mixture makes use of the formation of

A. a meso compound

B. enantiomers

C. diastereomers

D. racemate

Answer: C

View Text Solution

27. The lassaigne's extract is boiled with dil.HNO_3 before testing for halogens because

A. Silver halides are soluble in HNO_3

B. Na_2S and $NaCN$ are decomposed by HNO_3

C. Ag_2S is soluble in HNO_3

D. AgCN is soluble in HNO_3

Answer: B

View Text Solution

28. What is the decreasing order of strength of the bases OH^-, NH_2^-, $HC=C^-$ and $CH_3CH_2^-$?

A. $CH_2CH_2^- > HC=C^- > NH_2^- > OH^-$

B. $HC=C^- > CH_2CH_2^- > NH_2^- > OH^-$

C. $OH^- > NH_2^- > HC=C^- > CH_3CH_2^-$

D. $NH_2^- > HC=C^- > OH^- > CH_3CH_2^-$

Answer: A

View Text Solution

29. Given . 

Which of the given compounds can exhibits tautomerism?

A. I and III

B. II and III

C. I, II and III

D. I and II

Answer: C

View Text Solution

30. Cyclohexanol (I), acetic acid (II), 2,4,6-trinitrophenola(III) and phenol(IV) are given. In these the order of decreasing acidic character will be.

A. $III > II > IV > I$

B. $II > III > I > IV$

C. $II > III > IV > I$

D. $III > IV > II > I$

Answer: A

View Text Solution

31. Some meta-directing substituents in aromatic substitution are given. Which one is most deactivating?

A. $-SO_3H$

B. $-COOH$

C. $-NO_2$

D. $-C=N$

Answer: D

View Text Solution

32. Consider thiol anion $\left(RS^{-}\right)$ and alkoxy anion $\left(RO^{-}\right)$. Which of the following statements is correct?

A. RS^{-} is less basic but more nucleophilic than RO^{-}

B. RS^{-} is more basic and more nucleophilic than RO^{-}

C. RS^- is more basic and less nucleophilic than RO^-

D. RS^- is less basic and less nucleophilic than RO^-

Answer: A

View Text Solution

33. Consider the following compounds 

The correct decreasing order of their reactivity towards hydrolysis is

A. $(i) > (ii) > (iii) > (iv)$

B. $(iv) > (ii) > (i) > (iii)$

C. $(ii) > (iv) > (i) > (iii)$

D. $(ii) > (iv) > (iii) > (i)$

Answer: C

View Text Solution

34. The order of stability of the following tautomeric compounds is :

A. $III > II > I$

B. $II > I > III$

C. $II > III > I$

D. $I > II > III$

Answer: A

View Text Solution

35. Which of the following represent the correct order of stability of the given carbocations?

A. $F_3\overset{+}{C} > F_3C - \underset{|}{\overset{|}{\overset{+}{C}}} > \overset{+}{C}H_3$

B. $H_3\overset{+}{C} > F_3C - \overset{|+}{\underset{|}{C}} > \overset{+}{F_3}C$

C. $F_3C - \overset{|+}{\underset{|}{C}} > \overset{+}{F_3}C > \overset{+}{H_3}C$

D. $F_3C - \overset{|+}{\underset{|}{C}} > \overset{+}{H_3}C > \overset{+}{F_3}C$

Answer: B

View Text Solution

36. $(CH_3)_4N^+$ is neither an electrophile, nor nucleophilic because it

A. Does not have electron pair for donation as well as can not attract electron pair

B. neither has electron pair avaible for donation nor can accommodate electron since all shells of N are fully occupied

C. can act as Lewis acid and base

D. None of these

Answer: B

View Text Solution

37. In Khcldahl's methofd for the estimation of N_2, potassium suphate and copper sulphate are used.

On the basis of their functions which of the following statement(s) is /are correct?

(i). Potassium sulphate raises the b.pt. and ensures complete reaction (ii). Copper sulphate act as Catalyst

(iii). Potassium sulphate acts as catalyst and copper sulphate raises the b.pt.

A. Only (iii) is correct

B. (i) and (ii) are correct

C. Only (ii) is correct

D. None of these

Answer: B

View Text Solution

38. What is the relationship between opan chain forms of D-glucose and D-altrose?

A. enantiomers

B. constitutional isomers

C. diastereomers

D. different conformations of the same compounds

Answer: B

View Text Solution

39. The production of an optically active compound from a symmetric molecule without resolution is termed

A. Walden inversion

B. Partial racemisation

C. Asymmetric synthesis

D. Partial resolution

Answer: C

View Text Solution

40. The number of asymmetric C-atom created and number of possible stereoisomers when benzil (Ph CO CO Ph) is reduced with $LiAlH_4$.

A. $2, 3$

B. $2, 2$

C. $2, 4$

D. $3, 2$

Answer: A

View Text Solution

41. Among the following, the true property about  is

A. it is non-planar

B. its C^+ is sp^2 hybridized

C. an electrophile can attack on its C^+

D. it does not undergoes hydrolysis

Answer: B

View Text Solution

42. The compounds which contains all the four $1^{\circ}, 2^{\circ}, 3^{\circ}$ and 4° carbon atoms is

A. 2,3-dimethylpentane

B. 3-chloro-2,3-dimethylpentane

C. 2,3,4-trimethylpentane

D. 3,3-dimethylpentane

Answer: B

View Text Solution