



CHEMISTRY

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 06

Section A

1. Which of the following is not tetrahedral in shape?



Answer: C



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2. In ABCABC packing of atoms, which of the following cubic lattice has 74% space occupied by the atoms?

A. Body centred cubic lattice

B. Simple cubic lattice

C. Hexagonal closed lattice

D. Cubic closed lattice

Answer: D



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3. Which has highest boiling under 1 atm. pressure?

A. 0.1 M NaCl

B. 0.1 M Sucrose

C. 0.1 M $BaCl_2$

D. 0.1 M Glucose

Answer: C



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4. The percentage of filled spaces in simple cubic lattice is:

A. 36 %

B. 74 %

C. 68 %

D. 52.4 %

Answer: B



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5. Which of the following statement is correct for chlorobenzene?

- A. less reactive than benzyl chloride
- B. more reactive than dimethyl bromide
- C. more reactive than isopropyl chloride
- D. nearly same reactive as that of methyl chloride

Answer: A



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6. Mutarotation does not occur in:

A. D-Glucose

B. Sucrose

C. L-Glucose

D. Both (a) and (b)

Answer: B



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7. What will be the product formed for the following reaction:



A. 

B. 

C. 

D. 

Answer: B



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8. What is the oxidation state of oxygen in O_2F_2 ?

A. + 1

B. + 2

C. - 2

D. - 1

Answer: A



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9. The incorrect statement about Kolbe's reaction is?

A. Phenoxide ion is less reactive than phenol towards electrophilic aromatic substitution

B. Salicylic acid is formed as the main product

C. Ortho-hydroxybenzoic acid is formed as the main product

D. A weak electrophile CO_2 is used in this reaction

Answer: A



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10. How many number of tetrahedral voids in the face centred unit cell are present?

A. 12

B. 8

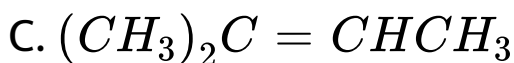
C. 10

D. 6

Answer: B



11. What are the possible product formed:



D. Both (a) and (b)

Answer: D



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12. Which of the following having ideal solution:

A. Benzene and toluene

B. n-hexane and n-heptane

C. Ethyl bromide and ethyl iodide

D. All of the above

Answer: D



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13. Among the following given compounds. Which of the following compounds on oxidation gives ethyl methyl ketone?

A. tert-butyl alcohol

B. 1-butanol

C. 2-butanol

D. 3-propanol

Answer: C



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14. I_2 is only slightly soluble in

A. $CHCl_3$

B. H_2O

C. CCl_4

D. CS_2

Answer: B



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15. The reagent used to convert glucose into saccharic acid is:

A. Ammonium hydroxide

B. Alkaline solution of iodine

C. Br_2 / H_2O

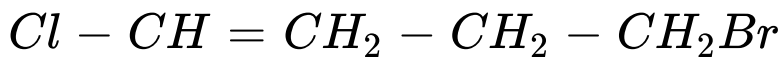
D. Nitric acid

Answer: D



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16. The IUPAC name of the compound shown below is?



- A. 1-chloro-4-bromo but-1-ene
- B. 4-chloro-1-bromo but-3-ene
- C. 4-bromo-1-chloro but-1-ene
- D. 1-bromo-4-chloro but-3-ene

Answer: C



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17. Identify the chlorinated product x formed when cyclo pentane reacts with chlorine in presence of sunlight.

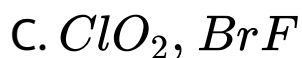
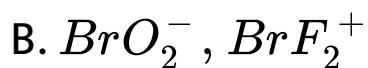
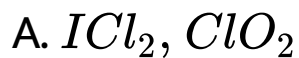
- A. 1-pentene
- B. 2-chloropentane
- C. 1-chlorocyclopentane
- D. 2-methyl butene

Answer: C



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18. Which of the following is isoelectronic pair ?



Answer: B



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19. For an ideal solution which one of the following is not correct:

A. $\Delta V = 0$

B. $\Delta H = \Delta V \neq 0$

C. $\Delta H = 0$

D. it must obey Raoult's law

Answer: B



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20. Which of the following statements are true?

A. Only type of interactions between particles of noble gases are due to weak dispersion forces.

B. Ionisation enthalpy of molecular oxygen is very close to that of xenon.

C. Hydrolysis of XeF_6 is a redox reaction.

D. Xenon fluorides are not reactive

Answer: A



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21. Which of the following is not a globular protein?

A. Myosin

B. Insulin

C. Haemoglobin

D. Albumin

Answer: A



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22. Which type of radius is present in noble gases?

A. Van der Waals radius

B. ionic radius

C. Covalent radius

D. Metallic radius

Answer: A



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23. What is the correct increasing order of acidic strength?

A. Propan-1-ol < 4-methyl phenol < phenol

B. propan-1-ol > 4-methyl phenol > phenol

C. Propan-1-ol < 4-methyl phenol <

phenol

D. Phenol > 4-methyl phenol > Propan-

1-ol

Answer: D



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24. Which noble gas is used for the treatment of malignant tumours?

A. Ne

B. Ar

C. Rn

D. He

Answer: C



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Section B

1. Which of the following has an example of maximum azeotropic solution?

A. CS_2 and CH_3COOH

B. CH_3CH_2OH and CH_3COCH_3

C. CH_3CHO and CS_2

D. $CHCl_3$ and CH_3COOCH_3

Answer: D



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2. Which of the following colligative property can be determined at room temperature:

A. Elevation in boiling point

B. depression in freezing point

C. osmotic pressure

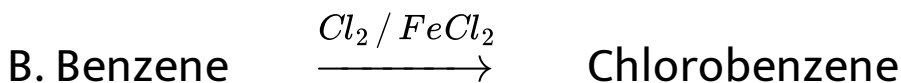
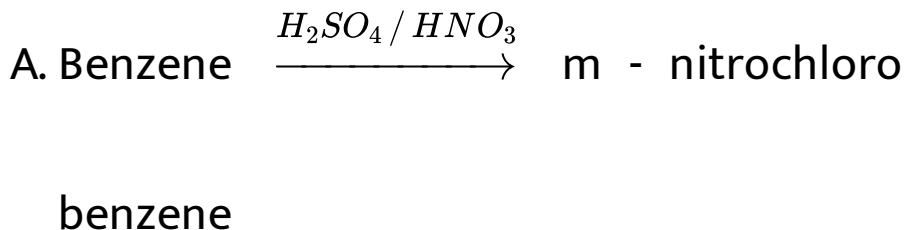
D. all of these

Answer: C



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3. m-nitro chlorobenzene can be prepared by:



D. All of the above

Answer: C



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4. Which of the following is most metallic ?

A. P

B. As

C. Sb

D. Bi

Answer: D



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5. Which of the following property is not present in RNA?

A. D-ribose Sugar

B. essential genetic material for plant virus

C. single polynucleotide chain

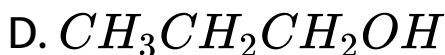
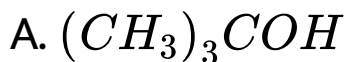
D. replicate itself

Answer: D



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6. Which one the following alcohol, gives alkenes most readily on acid-catalysed dehydration?



Answer: A



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7. Which of the following. has the highest $p\pi - p\pi$ bonding tendency?

A. N

B. P

C. As

D. Sb

Answer: A



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8. By heating sodium in the atmosphere of chlorine, sodium chloride is obtained which is yellow in colour. The cause of yellow colour is:

A. presence of face centered cubic lattice

B. presence of Cl^- ions in the crystal lattice

C. presence of e^- in the crystal lattice

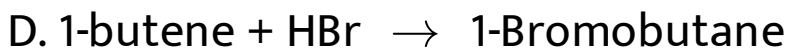
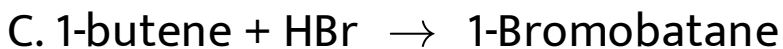
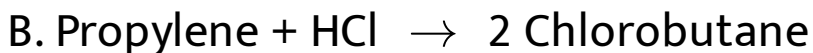
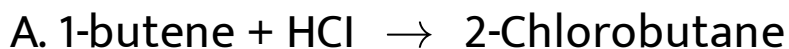
D. presence of Na^+ ions in the crystal lattice

Answer: C



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9. The incorrect reaction is:



Answer: D



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10. Which is the second most electronegative element in the periodic table?

A. Oxygen

B. Nitrogen

C. Sulphur

D. Phosphorus

Answer: A



11. An azeotropic binary liquid mixture has boiling point lower than either of them when it:

A. shows no deviation from Raoult's law

B. shows positive deviation from Raoult's law

C. shows negative deviation from Raoult's law

D. is saturated

Answer: B



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12. Which of the following is/are correct about sucrose and maltose:

A. Both are disaccharides

B. Provides quick energy

C. Sucrose is a non reducing sugar while maltose is a reducing sugar

D. All of these

Answer: D

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13. The increasing order of nucleophilicity is:



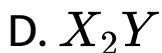
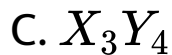
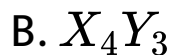
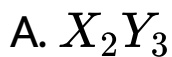


Answer: C



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14. In a compound, atoms of element X occupy $\frac{2}{3}$ rd of tetrahedral voids and those of element Y form ccp lattice and the formula of the compound will be:



Answer: B



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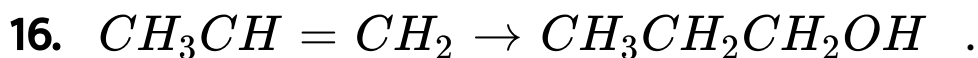
15. Ionisation enthalpy of group 15 elements is greater than that of group 14 elements due to:

- A. the presence of completely filled p orbitals.
- B. the presence of half-filled p orbitals.
- C. the presence of half-filled d orbitals.
- D. the presence of empty p orbitals.

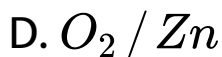
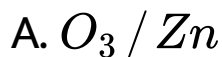
Answer: B



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Which reagent can be used for above convection .



Answer: C



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17. Name the compound formed cumene undergoes oxidation.

A. Anisole

B. phenol

C. o-cresol

D. p-cresol

Answer: B



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18. Which of the following statements is incorrect?

A. Ra has a very short half-life as it is radioactive

B. About 78% of air present in the earth's atmosphere is composed of O_2 gas.

C. Bi occurs as sulphide minerals.

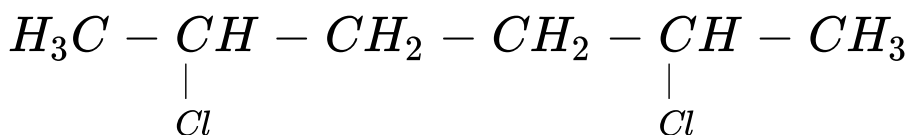
D. N occurs in the earth's crust in the form of nitrates.

Answer: B



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19. What is the IUPAC name of the compound?

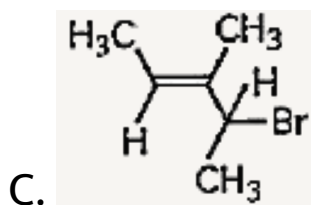
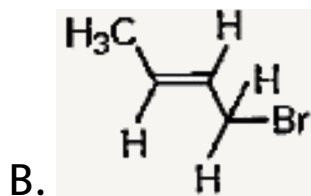
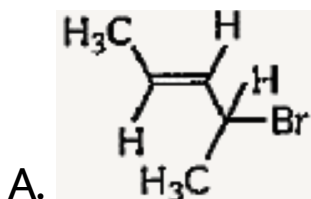


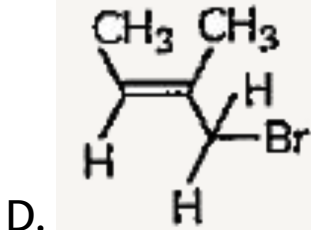
- A. 2-chloro-5-hydroxyhexane
- B. 2-chlorohexan-5-ol
- C. 2-hydroxy-5-chlorohexane
- D. 5-chlorohexan-2-ol

Answer: D



20. The correct structure of 1-bromo-2-methylbut-2-ene is:





Answer: C

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21. Assertion (A): SF_6 is a well known compound while SH_6 does not exist.

Reason (R): The reactivity of halogens increases as the atomic number increases.

- A. Both A and R are true and R is the correct explanation of A
- B. Both A and R are true but R is not the correct explanation of A
- C. A is true but R is false
- D. A is false but R is true.

Answer: C



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22. Assertion (A): In nucleophilic substitution reactions the presence of nitro group increases the reaction of aryl halides.

Reason (R): The intermediate carbanion is stabilized due to the presence of nitro group.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true.

Answer: A



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23. Assertion (A): When scuba divers come towards surface, their capillaries get blocked which is painful and dangerous to life.

Reason (R): These occurred release of dissolved gases as the pressure decreases and

leads to the formation of bubbles of nitrogen in the blood.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true.

Answer: A



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24. Assertion (A): He and Ne do not form compounds with fluorine.

Reason (R): Bond dissociation enthalpy of F-F bond is less.

A. Both A and R are true and R is the correct explanation of A

B. Both A and R are true but R is not the correct explanation of A

C. A is true but R is false

D. A is false but R is true.

Answer: B



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25. Assertion (A): Polar solute dissolve in polar solvents and non-polar solute dissolves in non-polar solvents.

Reason (R): A solute dissolves in a solvent having similar intermolecular interactions, i.e. dissolves like.

- A. Both A and R are true and R is the correct explanation of A
- B. Both A and R are true but R is not the correct explanation of A
- C. A is true but R is false
- D. A is false but R is true.

Answer: A



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Section C

1. Match the following:



Which of the following is best matched :

A. (I)-(d), (II)-(c), (III)-(b), (IV)-(a)

B. (I)-(c), (II)-(d), (III)-(a), (IV)-(b)

C. (I)-(b), (II)-(a), (III)-(c), (IV)-(d)

D. (I)-(d), (II)-(b), (III) -(c), (V)-(a)

Answer: C



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2. Which of the following analogies is correct.

A. PCl_3 -Trigonal pyramidal - PH_3 Trigonal planar

B. O_3 - Neutral :: O_2 - Acidic

C. N_2 -Gas: : Bi - solid

D. Phosphoric acid-Tribasic :: Phosphorous acid - Tetrabasic.

Answer: C



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3. Complete the following analogies:

Nucleophile approach to tetrahedral carbon

A: Find out favoured alkene product in
dehydro-halogenations B

A. A : Hyperconjugation :: B: Kharasch
effect

B. A: SN^2 mechanism :: B: SN^1 mechanism

C. A: Stearic influence :: B: Saytzeff's rule

D. A: Elimination reaction :: B: Substitution
reaction

Answer: C



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4. Any departure from a perfectly ordered arrangement of constituent particles is called defect or imperfection. In solids, when the ratio between cations and anions remains the

same after defect, it is termed as stoichiometric defects. Schottky and Frenkel defects are categorized into stoichiometric defects. In Schottky defect equal number of cations and anions are missing while in Frenkel defect cations are missing from lattice sites and occupy interstitial sites. In non-stoichiometric defects, the ratio of cations and anions changes as a result of the defect. Metal excess and metal deficiency are non-stoichiometric defects.

Thermodynamic defects are observed in:

A. Rubber

B. Glass

C. Plastic

D. Solids NH_3

Answer: D



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5. Any departure from a perfectly ordered arrangement of constituent particles is called defect or imperfection. In solids, when the

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Frenkel defect is not exhibited by:

A. AgCl

B. Ag Br

C. Zns

D. CsCl

Answer: D



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6. Any departure from a perfectly ordered arrangement of constituent particles is called defect or imperfection. In solids, when the

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What type of defect is formed when solid is heated:

A. Vancacy defect

B. Impurity defect

C. Interstitial defect

D. Metal deficiency defect

Answer: A



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