

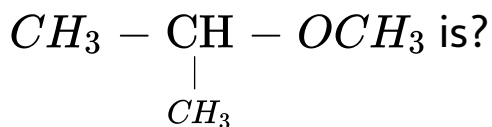
CHEMISTRY

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 10

Section A

1. What is the IUPAC name of the given compound



A. 2-methoxypropane

B. 2-methoxy-2-methylethane

C. 1-methoxy-1-methylethane

D. isopropyl methyl ether

Answer:



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2. Which solid shows metal deficiency defect?

A. NaCl

B. LiCl

C. FeO

D. ZnO

Answer:



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3. Which of the following are peroxo acids of sulphur?



Answer:



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4. Which of the following statements is false?

A. Units of atmospheric pressure and osmotic pressure are the same.

B. In reverse osmosis, solvent molecules move through a semipermeable membrane from a region of lower concentration of solute to a region of higher concentration.

C. The value of molal depression constant depends on nature of solvent.

D. Relative lowering of vapour pressure, is a dimensionless quantity.

Answer:



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5. The reagent that is used to convert phenol into benzene is:

A. Zn dust

B. CO_2

C. $CHCl_2 / aqNaOH$

D. $NaCrO_2 / H_2SO_4$

Answer:



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6. On heating with concentrated $NaOH$ solution in an inert atmosphere of CO_2 , white phosphorus gives a gas. Which of the following statement is incorrect about the gas?

A. It is highly poisonous and has smell like rotten fish.

B. It's solution in water decomposes in the presence of light.

C. It is more basic than NH_3

D. It is less basic than NH_3 .

Answer:



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7. Affinity for hydrogen decreases in the group from fluorine to iodine. Which of the halogen acids should have highest bond dissociation enthalpy ?

A. HF

B. HCl

C. HBr

D. HI

Answer:



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8. Which defect alters the density of a crystal lattices?

- A. Frenkel defect
- B. Metal deficiency defect
- C. Schottky defect
- D. Metal excess defect

Answer:



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9. Which of the following on solidifying forms a molecular solid?

A. Calcium fluoride

B. silicon carbide

C. Rocks salt

D. Methane

Answer:



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10. Nucleophilic bimolecular substitution involve:

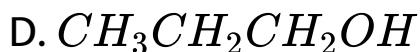
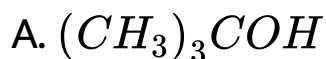
- A. formation of carbocation
- B. racemic mixture reaction of a halides
- C. inversion of configuration
- D. retention of configuration

Answer:



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11. Which one of the following alcohols undergoes acid-catalysed dehydration to alkenes most readily ?

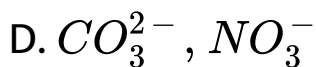
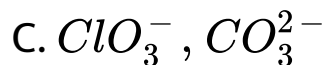
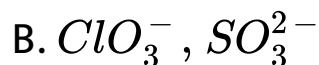
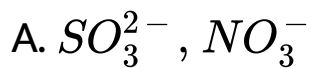


Answer:



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12. Which of the following pairs of ions are isoelectronic and isostructural?



Answer:



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13. The incorrect statement is:

- A. Two enantiomers in equal proportions have zero optical rotation.
- B. Enantiomers are non-superimposable mirror images.
- C. Enantiomers possess identical melting and boiling points.
- D. S_N2 reaction are accompanied by racemisation in optically active alkyl halides.

Answer:



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14. 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:



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15. Which of the following compounds can be prepared by Dow's process?

A. Esters

B. Phenols

C. Alcohols

D. Ethers

Answer:



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16. The value of a, b and c values in orthorhombic crystal are 4.2 Å 8.6 Å and 8.3 Å. The molecular mass of the solute is 155 g mol^{-1} and density is 3.3 g/cc. The number of formula units per unit cell is:

A. 6

B. 3

C. 4

D. 2

Answer:



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17. 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:



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18. α -D(+)-glucose and β -D(+) glucose are

- A. epimers
- B. anomers
- C. conformers
- D. enantiomers

Answer:



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19. 15 g of methyl alcohol is dissolved in 35 g of water. The mass percentage of methyl alcohol in solution is:

A. 0.35

B. 0.3

C. 0.45

D. 0.4

Answer:



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20. Mole fraction of a solution in 1.00 molal aqueous solution is

A. 1.8

B. 0.0177

C. 0.05

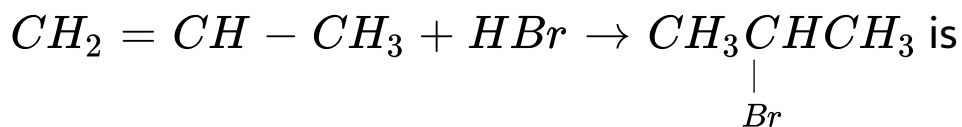
D. 0.098

Answer:



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21. The reaction



- A. electrophilic substitution
- B. electrophilic addition
- C. electrophilic addition
- D. free radical addition

Answer:



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22. Which of the following forms a diatomic molecule?

A. Phosphorus

B. Bismuth

C. Arsenic

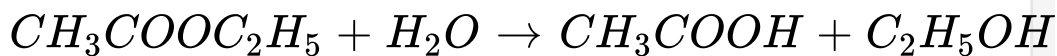
D. Nitrogen

Answer:



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23. Which of the following is used as a catalyst for the following reaction?



- A. Chlorine
- B. Hydrochloric acid
- C. Sulphuric acid
- D. Nitrous acid

Answer:



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Section B

1. The structure of $XeOF_4$ is:

- A. pyramidal
- B. square pyramidal
- C. octahedral
- D. tetrahedral

Answer:



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2. $CH_3CH = CH_2 \rightarrow CH_3CH_2CH_2OH$ Which reagent can be used for above conversion.

A. O_3 / Zn

B. Osmium tetroxide (OsO_4 / CH_2Cl_2)

C. B_2H_6 and alk H_2O_2

D. O_2 / Zn

Answer:



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

A. Neon

B. Argon

C. Radon

D. Helium

Answer:



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

A. van der Waals radius

B. ionic radius

C. covalent radius

D. metallic radius

Answer:



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

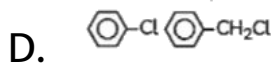
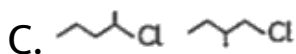
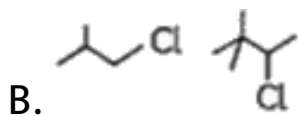
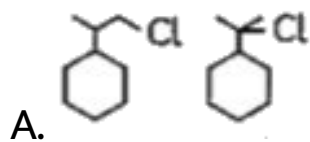
- A. D-ribose Sugar
- B. essential genetic material for plant virus
- C. single polynucleotide chain
- D. replicate itself

Answer:



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6. For SN1 reaction which pair has the first compound more reactive than second?



Answer:



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7. 15 g of methyl alcohol is dissolved in 35 g of water. The mass percentage of methyl alcohol in solution is:

A. 0.35

B. 0.3

C. 0.45

D. 0.4

Answer:



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8. Nucleosides is a combination of:

- A. Nucleic acids
- B. Base and Sugar
- C. Base and phosphate
- D. Sugar and phosphate

Answer:



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9. Anamolous behavior of oxygen compared to other elements group 16 is due to

A. High electronegativity

B. Small size

C. Absence of d orbitals

D. all the above

Answer:



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10. Which of the following element is not a chalcogen?

A. Na

B. S

C. Se

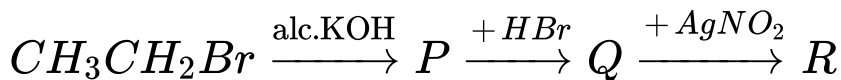
D. Te

Answer:



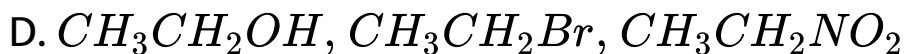
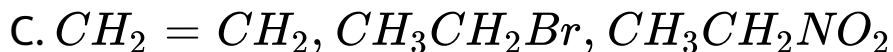
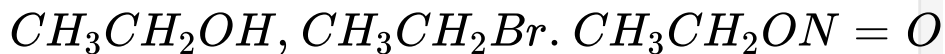
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11. Identify compounds P, Q and R in the following reactions?



A. $CH_2 = CH_2$, CH_3CH_2Br , $CH_3CH_2NO_2$

B.



Answer:



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12. What is the electron gain enthalpy for noble gases?

A. > 0

B. < 0

C. $= 0$

D. It is not defined for noble gases

Answer:



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13. K_H value for Ar_g , CO_{2g} , $HCHO_g$ and CH_{4g}

are 40.39, 1.67, 1.83×10^{-5} and 0.413 respectively.

Arrange these gases in the order of their increasing solubility.



Answer:



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14. How many series of salts are formed by H_3PO_4 ?

A. One

B. Two

C. Three

D. Four

Answer:



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15. A binary ($A^+ B^-$) has a zinc blends structure with B ions constituting the lattice and A^+ ions occupying 25% tetrahedral holes. The formula of solids is:

A. AB

B. AB_2

C. A_2B

D. AB_4

Answer:



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16. Complete Hydrolysis of XeF_6 gives

A. XeO_2

B. XeO_3



Answer:



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17. Assertion (A) All naturally occurring α -aminoacids except glycine are optically active.

Reason (R) Most naturally occurring amino acids have L-configuration.

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:



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18. Assertion : The packing efficiency is maximum for the fcc structure.

Reason : The coordination number is 12 in fcc structure.

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

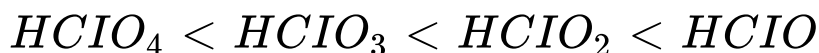
D. A is false but R is true

Answer:



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19. Assertion (A): The order of acidic strength of oxy-acids of halogens are:



Reason (R): ClO_4^- , ClO_3^- , ClO_2^- , ClO^- is the order of stability as dispersal of negative charge decreases.

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:



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20. Assertion (A): Proteins on heating or change in pH lead to denaturation:

Reason (R): Denaturation is due the breaking of the hydrogen bonds and helix get uncoiled.

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:



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21. Assertion (A): Fibrous protein are insoluble in water.

Reason (R): Polypeptide chains run parallel to each other.

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:



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Section C

1. Which of the following analogies is correct:

A. Lucas Reagent: to distinguish between one, two and three degree alcohols :: $FeCl_3$ test : gives violet coloration with phenols

B. Ethyl alcohol in water hydrogen bonding ::

$FeCl_3$: used to distinguish alcohols high speed photography

C. MeOH: oxidises to acetone : : Phenol : basic in nature

D. Williamson synthesis: Preparation of phenol :: Phenol : dipole -dipole interactions

Answer:



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2. Complete the following analogy: Fitting reaction : A:: Finkelstein reaction: B

A. A : Ion exchange, B: produces alkyl chloride

B. A : Inversion, B: Retention

C. A: biphenyl product, B: produces alkyl iodide

D. A: gives alkyl halide only: B: Produces haloarene only

Answer:



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3. Colligative properties are the physical changes that result from adding solute to a solvent. These depend on how many solute particles are present as well as the solvent amount, but they do not depend on the type of solute particles, although do depend on the type of solvent. Osmotic pressure is a colligative property of solutions that is observed using a semipermeable membrane, a barrier with pores small enough to allow solvent molecules to pass through but not solute molecules or ions. Transport in plants, survival of cells, killing of snails and slugs, swelling of resin are some examples where osmotic pressure seems

applicable in real life situations.

Isotonic solutions are solutions which have:

- A. Same vapour pressure
- B. Equal pressure
- C. Same osmotic pressure
- D. Same volume

Answer:



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4. Colligative properties are the physical changes that result from adding solute to a solvent. These depend on how many solute particles are present as well as the solvent amount, but they do not depend on the type of solute particles, although do depend on the type of solvent. Osmotic pressure is a colligative property of solutions that is observed using a semipermeable membrane, a barrier with pores small enough to allow solvent molecules to pass through but not solute molecules or ions. Transport in plants, survival of cells, killing of snails and slugs, swelling of resin are some examples where osmotic pressure seems

applicable in real life situations.

An unripe mango placed in a concentrated salt solution to prepare pickle, shrivels because

- A. it gains water due to osmosis
- B. It loses water due to reverse osmosis
- C. it gains water due to reverse Osmosis
- D. it loses water due to osmosis

Answer:



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5. Colligative properties are the physical changes that result from adding solute to a solvent. These depend on how many solute particles are present as well as the solvent amount, but they do not depend on the type of solute particles, although do depend on the type of solvent. Osmotic pressure is a colligative property of solutions that is observed using a semipermeable membrane, a barrier with pores small enough to allow solvent molecules to pass through but not solute molecules or ions. Transport in plants, survival of cells, killing of snails and slugs, swelling of resin are some examples where osmotic pressure seems

applicable in real life situations.

Osmotic pressure of a solution is 0.0821 atmata temperature of 300 K. The concentration in moles/litre will be:

A. 0.33

B. 0.666

C. 0.3×10^{-2}

D. 3

Answer:



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