

Chemistry 2012

1. The root mean square velocity of a gas is doubled when the temperature is

- a) increased four times
- b) increased two times
- c) reduced to half
- d) reduced to one fourth

Ans.(a)

2. Acidity of phenol is due to

- a) hydrogen bonding
- b) phenolic group
- c) benzene ring
- d) resonance stabilisation of its anion

Ans.(d)

6. When ice melts into water, the entropy

- a) becomes zero (b) remains same
- c) decreases (d) increases

Ans.(d)

7. Reduction of nitrobenzene in the presence of Zn/NiCl₂·6H₂O gives

- a) azobenzene
- b) hydrazobenzene
- c) N-phenyl hydroxyl amine
- d) aniline

Ans.(c)

8. Which one of the following is not a protein?



- a Wool (b) Nail
C Hair d DNA

Ans.(d)

9. Which of the following hexoses will form the same osazone when treated with excess phenyl hydrazine?

- a D-glucose, α -D-fructose and D-galactose
b α -D-glucose, α -D-fructose and **D-mannose**
c D-glucose, D-mannose and D-galactose
d α -D-fructose, D-mannose and D-galactose

Ans.(b)

10. A silver cup is plated with silver by passing 965C of electricity. The amount of Ag deposited is

- a 107.89 g (b) 9.89 g
c 1.0002g d 1.08g

Ans.(d)

13. The maximum proportion of available volume that can be filled by hard spheres in diamond is

- a) 0.52 (b) 0.34
C 0.32 (d) 0.68

Ans.(b)

14. If we mix a pentavalent impurity in a crystal lattice of germanium. what type of semiconductor formation will occur?

- a P-type
b n-type
c Both (a and b)
d None of the two

Ans.(b)



16. The product of reaction between alcoholic silver nitrite with ethyl bromide is

- a ethene (b ethane
- c ethyl nitrile (d) nitro ethane

Ans.(d)

20. Which of the following does not answer iodoform test?

- a n -butyl alcohol
- b) Acetophenone
- c A cetaldehyde
- d) Ethylmethyl ketone

Ans.(a)

21. Which one of the following undergoes reaction with 50% sodium hydroxide solution to give the corresponding alcohol and acid?

- a Phenol (b) l3enzaldehyde
- c Butanal d Benzoic acid

Ans.(b)

26. The relative lowering of vapour pressure of a dilute aqueous solution containing non volatile solute is 0.0125. The molality of the solution is about

- a 0.70 (b 0.50
- c 0.90 d 0.80

Ans.(a)

30. Sulphuric acid has great affinity for water because

- a it hydrolyses the acid
- b) it decomposes the acid
- c acid forms hydrates with water
- d) acid decomposes water

Ans.(c)



31. Helium-oxygen mixture is used by deep sea divers in preference to nitrogen-oxygen mixture because

- a) helium is much less soluble in blood than nitrogen
- b) nitrogen is much less soluble in blood than helium
- c) due to high pressure deep under the sea nitrogen and oxygen react to give poisonous nitric oxide
- d) nitrogen is highly soluble in water

Ans.(a)

33. The equivalent weight of KMnO_4 for acid solutions is

- a) 79
- b) 52.16
- c) 158
- d) 31.6

Ans.(d)

38. For a first order reaction, the concentration changes from 0.4 M to 0.1 M in 15 min. The time taken for the concentration to change from 0.1 M to 0.025 M is

- a) 30 min
- b) 15 min
- c) 7.5 min
- d) 60 min

Ans.(a)

39. When phenol is treated with excess bromine water it gives

- a) m-bromophenol
- b) o- and p-bromophenols
- c) 2, 4-dibromophenol
- d) 2, 4, 6-tribromophenol

Ans.(d)

40. Which reaction is suitable for the preparation of trichloroacetic acid

- a) Iodoform reaction
- b) Reimer-Tiemann reaction
- c) Friedel-Crafts acylation
- d) Volhard-Zelinsky reaction



- b) Nef reaction
- c) the phenyl reaction
- d) Perkin condensation

Ans.(a)

43. A group of atoms can function as a ligand only when

- a) it is a small molecule
- b) it has an unshared electron pair
- c) it is a negatively charged ion
- d) it is a positively charged ion

Ans.(b)

50. Which among the following statements is correct with respect to the optical isomers?

- a) Enantiomers are non-superimposable mirror images
- b) Diastereomers are superimposable images
- c) Enantiomers are superimposable mirror images
- d) *Meso* forms have no plane of symmetry

Ans.(a)

51. Inductive effect involves

- a) delocalisation of π -electrons
- b) displacement of π -electrons
- c) delocalisation of σ -electrons
- d) displacement of π -electrons

Ans.(b)

53. Lipids are

- a) nucleic acids occurring in plants
- b) proteins occurring in animals
- c) carbohydrates occurring in plants
- d) fats of natural origin

Ans.(d)



54. The enzyme pepsin hydrolyses

- a) proteins to amino acids
- b) lipids to fatty acids
- c) glucose to ethyl alcohol
- d) polysaccharides to monosaccharides

Ans.(a)

58. Ammonia is dried over

- a) slaked lime
- b) calcium chloride
- c) phosphorus pentoxide
- d) quick lime

Ans.(d)

