QDR

QUARTERLY EXAMINATION - 2013

XI – Std | **CHEMISTRY** | RATHNA

Time : 3.00 Hrs | www.tnschools.co.in | Marks : 150

I **Answer all the questions. Choose the correct answer.** 30 x 1 = 30

1. The value of standard pressure is
a) $2.013 \times 10^5 NM^{-2}$ b) $1.013 \times 10^5 NM^{-2}$ c) $5.013 \times 10^2 NM^{-2}$ d) $1.15 \times 10^{-3} NM^{-2}$
2. A compound contains 50% of X (atomic mass 10) and 50% of y (atomic mass 20) which formulate pertain to above data? a) XY b) X_2Y c) X_4Y_3 d) $(X_2)_3 Y_3$
3. Which of the follow weighs the most? a) one gram atom of nitrogen
b) one mole water c) one mole of sodium d) one mole of H_2SO_4
4. The value of gram molar volume is
a) $2.24 \times 10^5 m^{-3}$ b) $2.24 \times 10^{-1} m^3$ c) $2.24 \times 10^{-3} m^3$ d) $2.24 \times 10^{-2} m^3$
5. The number of moles of oxygen present in 6.023×10^{24} number of carbon di oxide is
a) 1 mole oxygen b) 0.5 mole oxygen c) 5 mole oxygen d) 10 mole oxygen
6. Cinnabar is a ore of a) lead b) iron c) mercury d) silver
7. The method of concentration of sulphide ores
a) Mond's process b) Magnetic separation c) Gravity separation d) Froath floataction
8. The metals exist in nature state is a) Gold b) Calcium c) Bismuth d) Germanium
9. Matte is a mixture of
a) $Cu_2S + FeS$ b) $Cu_2S + FeO$ c) $Cu^2O + FeO$ d) $Cu_2O + FeS$
10. Which among the following is lightest? a) An atom of hydrogen b) electron c) neutron d) proton
11. The value of quantum number of 2p orbital is a) $n = 1\ l = 2$ b) $n = 1,\ l = 0$ c) $n = 2, l = 0$ d) $n = 2, l = 1$
12. The actual electronic configuration of $_{29}Cu$ is
a) $(Ar)\ 4S^1$ b) $(Ar)\ 4S^2$ c) $(Ar)\ 3d^{10}\ 4S^1$ d) $(Ar)\ 3d^9\ 4S^2$
13. Number of orbitals present in d - sub shell is a) 1 b) 3 c) 5 d) 7
14. The number of Na^+ and Cl^- ions present in an unit cell of sodium chloride
a) 2, 2 b) 8, 8 c) 6, 6 d) 4, 4
15. Lattice structure of calcium chloride is
a) body centred cubic b) face centred cubic c) simple cubic d) square plannar
16. Corner atom of simple cubic system in shared by ___ number of unit cell. a) 2 b) 8 c) 1 d) 4
17. The value of gas constant R is ___ J / deg / mole. a) 1.987 b) 8.31×10^7 c) 0.082 d) 8.314
18. The principle involved in Linde's method
a) Joule Thomson effect b) Adiabatic expansion c) Adiabatic demagnetisation d) all the above
19. A curve drawn at constant temperature is called an isotherm. This shows relationship between
a) P and 1/v b) PV an V c) P and V d) V and 1/P
20. Inversion temperature of hydrogen gas is a) -180^o C b) 240^o C c) -30^o C d) -80^o C
21. Which of the following is Boyle's law a) $P \alpha T$ b) $V \alpha T$ c) P/T = constant d) PV constant
22. Which among the following shows both ionic & covalent nature a) CH_4 b) H_2 c) KCN d) KCl
23. A bond formed by the transfer of electron from one atom to other
a) covalent b) ionic c) co-ordinate d) hydrogen bond
24. The properties depends only the number of particle of solution a) addition properties b) chemical properties c) thermodynamic properties d) colligative properties
25. The accuracy of Beckmann thermometer is a) 0.01 K b) 6 K c) 0.1 K d) 0.6 K
26. The first organic compound synthesised in laboratory is
a) urea b) ammonium cyanate c) ethyl alcohol d) ammonium acetate
27. Which among the following in an example of hetero cyclic compound
a) Benzene b) Furan c) Cyclo pentane d) Napthalene
28. Benzene and nitrobenzene can be separated by the method of
a) simple distillation b) crystallization c) fractional crystallization d) chromotography
29. Column chromatography is based on the principle of
a) adsorption b) partition c) absorption d) distribution
30. Which of the following compound purified by sublimation
a) Benzene b) Naphthalene c) Ethanol d) Dimethyl ether

PART - II

Answer any 15 questions only. 15 X 3 = 45

31. Define Avogadro number.
32. State law of volumetric analysis.

33. Calculate oxidation number of underlined element of the following compound. a) $K\underline{Mn}O_4$ b) $\underline{Cr}_2O_7^{2-}$
34. What is gravity separation method?
35. Calculate the mass of one molecule of carbondioxide.
36. What are Miller indices?
37. Draw the unit cell of NaCl.
38. Sketch a) simple cubic b) Body centred cubic c) Face centred cubic
39. Calculate the number of Cs+ and Cl^- ion present in unit cell.
40. State Graham's law of diffusion.
41. What is Joule Thomson effect.
42. Define critical temperature.
43. State law of octet.
44. State Rault's law.
45. What are Homologous servers? Give example.
46. Give the IUPAC name of
    a) $CH_3CH_2 - OH$ b) $CH_3 - O - CH_2CH_3$ c) $CH_3-CH_2 - CH = CH_2$
47. What are functional group? Give example.
48. Mention the different methods of distillation.
49. Mention the advantages of distillation at reduced pressure.
50. What is sublimation? Give example.
51. What is homolytic & Heterolytic fission.

PART - III

Note : Answer any seven questions selecting atleast two questions from each section. 7 X 5 = 35

SECTION - A

52. How do you calculate the equivalent mass of an element by oxide method?
53. What are the steps to write empherical formula?
54. How Nickel is separated by Mond's process?
55. Mention the postulates of Niels Bohr Atom model.

SECTION - B

56. Differentiate bodycentred cubic from face centred cubic system.
57. Explain the Linde's method of Liquification of gas.
58. Mention the different between covalent band and ionic bond.
59. Write note on Beckmann thermometer.

SECTION - C

60. What are substitution reaction? Explain its type.
61. Explain the classification of organic compounds.
62. Write note on solvent extraction.
63. Explain column chromatography.

PART - IV

4 x 10 = 40

Note : Answer any four questions from the following and the question number No. 70 is compulsory.

64. a) Explain the determination of molecular weight of volatile compound by Victor Mayer method.
    b) Balance the equation
    i) $Na_2SO_4 + BaCl_2 \longrightarrow NaCl + BaSO_4$ ii) $KMnO_4 + HCl \longrightarrow KCl + MnCl_2 + H_2O + Cl_2\uparrow$
65. a) What is meant by principal quantum number?
    b) What is zone refining? Describe the principle involved in the purification of the metal by this method.
66. a) Mention the difference between amorphous solid and crystalline solid.
    b) Derive the relation between Vander waals and critical constant.
67. a) How gases are liquified by adiabatic demagnetisation.
    b) Explain the determination of elevation of boiling point by cottrell's method.
68. a) Explain the structural isomerism with example. b) Differentiate nucleophile from electrophilie.
69. a) Write note on fractional distillation. b) Explain Inductive effect.
70. a) A compound on analysis gave the following percentage of composition C = 54.54%, H = 9.09%, O = 36.36%. The vapour density of the compound was found to be 44. Find out the molecular formula of the compound.
    b) What weight of non volatile solute (urea) NH_2CONH_2 needs to be dissolved in 100g of water in order to decrease the vapour pressure of water by 25%. What will be the molarity of solution? ***(OR)***
    c) Write the IUPAC name of the following. i) $CH_3-CH_2-CH_2-OH$ ii) CH_3-CH_2CHO iii) $CH_3-\overset{\overset{O}{\|}}{C}-CH_3$
    iv) HCOOH v) $CH_3 - CH_2 - CH_2 - NH_2$.
    d) Calculate number of Na^+ and Cl^- ions present the each of its unit cell.