UNIT TEST -(LN-7,8 &9PART-I

STD : X

CHEMISTRY

MARKS: 50

TIME 1.30 HRS

INSTRUCTIONS: 1.Check the question paper for fairness of printing. If there is any lack of fairness, inform the hall supervisor immediately.

2. Use **Blue** (or) **Black** ink to write and **underline** and **pencil** to draw diagrams.

NOTE: This question paper contains four parts

Part-I

NOTE: i) Answer all the questions. ii) Choose the most suitable answer and write the code with the corresponding answer. (12x1=12)

1. Which of the following is a tri atomic molecule?
   a) Glucose b) Helium c) carbon dioxide d) Hydrogen.
2. The number of molecule in 16g oxygen is _____
   a) 6.023×10^{23} b) 6.023×10^{-23}
   c) 3.0115×10^{22} d) 3.0115×10^{23}
3. The sum of the number of protons and neutrons of an atom is called its____.
   a) Mass number b) Atomic number c) neutron d) mole.
4. The shrinking of electron cloud due to high positive charge in the nucleus, in the size of an atom is_____.
   a) Increase b) decrease c) remains same d) both a&b
5. Alloys are homogeneous mixture of a metal with a metal (or) non-metal, which among the following alloys contains non-metal as one of its constituents.
   a) Brass b) bronze c) stainless steel d) amalgam
6. The process of coating the surface of metal with thin layer of zinc is called.
   a) Painting b) twining c) galvanization d) electroplating
7. _____is an important metal to form Amalgam.
   a) Ag b) Hg c) Mg d) Al
8. The number of components in a binary solution is ____.
   a) 2 b) 3 c) 4 d) 5
9. Solubility of oxygen in water is____at low temperature.
   a) Increase b) decrease
   c) Remains constant d) first increase and decrease
10. The component present in lesser amount in a solution is called___.
    a) Solute b) solvent c) solution d) none
11. Chemical formula of rust is_____.
    a) $FeO.xH_2O$ b) $FeO_4.xH_2O$ c) $Fe_2O_3.xH_2O$ d) FeO.
12. The basis of modern periodic table is _____

a) Atomic mass b) isotopic mass
c) Atomic radii d) atomic number

Part- II

NOTE:-Answer any six questions (Q.No:17is compulsory) (6x2=12)

13. True (or) false (If false give the correct statement)
    a) Ionic radius increases across the period from left to right.
    b) In a period metallic character is increases and non-metallic character is decreases.
14. Name the acid that renders aluminum passive. Why?
15. What is aqueous solution and non-aqueous solution? Give an example.
16. Find the percentage of nitrogen in Ammonia.
17. Calculate the number of water molecule present in one drop of water which weighs 0.18g.
18. State Avogadro's hypothesis.
19. Define solution.
20. Match it:

a) Liquid in solid	-	smoke
b) Liquid in gas	-	soda water
c) Gas in liquid	-	Amalgam
d) Solid in gas	-	cloud

21. Write the uses of iron?

Part-III

NOTE:-Answer any three questions (Q.No:23 is compulsory)(3x4=12)

22. Metal A belongs to period 3 and group 13.A in red hot condition reacts with steam to form B.A with strong Alkali forms C. Find A, B, C with reactions.

23. How many grams are there in the following?
    i) 2 moles of Hydrogen molecule, H_2
    ii) 3 moles of Chlorine molecules Cl_2
    iii) 5 moles of Sulphur molecules S_8
    iv) 4 moles of Phosphorous molecules P_4
24. Define: i) mole.
    ii) List out the difference between atom and molecules.
25. Write a note on i) saturated solution. ii) Unsaturated solution.
26. a) Mention the Cathode. Anode, electrolyte used in the electrolytic refining of copper.
    b) The value of d (C-C) distance is experimentally found to be $1.54A^0$.Find the covalent radius.

Part-IV

NOTE: 1. Answer in detail (Any2). 2. Each question carries seven marks. 3. Draw diagram wherever necessary. (2x7=14)

27. Write a note on various factors affecting solubility.

(OR)

28. The electronic configuration of metal A IS 2,8,18,1.The metal A when exposed to air and moisture forms b a green layered compound. A with con.H_2SO_4 forms C and D along with water. D is a gaseous compound. Find A,B,C,D.

b) Along with cryolite and alumina, another substance added to the electrolyte mixture. Name the substance and give one reason for addition.

29. Explain modern atomic theory.

(OR)

30. a) Explain smelting process.

b) A is a silvery metal. A combines with O_2 to form B at 800^0C the alloy of A is used in making Aircraft. Find A and B

c) Calculate the no. of mole in 1.51×10^{23} molecules of NH_4Cl

********** ALL THE BEST **********

SRI VIDYA MANDIR MATRIC HR. SEC SCHOOL – PALACODE

X – CHEMISTRY KEY ANSWER

Q. NO	KEY ANSWER	MARK	Q. NO	KEY ANSWER	MARK
1	1. Carbon dioxide 2. 3.0115×10^{23} 3. Mass number 4. Decrease 5. Stainless Steel 6. Galvanisation 7. Hg 8. 2 9. Increase 10. Solute 11. $Fe_2O_3.xH_2O$ 12. Atomic number	12	19 20 21.	Homogeneous mixture Two or more substance Solute + solvent = solution a) Amalgam b) Cloud c) Soda water d) Smoke i) Making an electromagnet ii) Making pipes,stoves, radiators, railings iii) Construtingbuildings,machinery parts	1 1 4x1/ 2 = 2 2
13	a) decrease b) Decrease and increase	1 1	22.	Answer the following (any 3)Q.No 23 compulsory: $2\,Al + 3\,H_2O \rightarrow Al_2O_3 + 3\,H_2\uparrow$ (steam) (aluminium oxide) $2\,Al + 2\,NaOH + 2\,H_2O \rightarrow 2\,NaAlO_2 + 3\,H_2\uparrow$ (Sodium meta aluminate) A – Aluminium b – Aluminium Oxide C – Sodium Meta Aluminate	2 2
14	dil .and Con. HNO_3 Renders aluminium passive layer of oxide film in its surface	1 1	23. 24.	i)4g ii) 213 g iii)1280g iv) 496g a) Amount of substance that contains as many elementary particles as there in 12g of carbon – 12 isotope 1 mole = 6.023×10^{23} b) Difference b/w atoms and molecules (4 points)	4 2 2
15	14. a)water act as a solvent Ex salt solution b) Absence of water or other than water act as a solvent Ex: sulphur in carbondisulphide.	1 1	25.	(i) **Saturated solution:** A solution in which no more solute can be dissolved in a definite amount of the solvent at a given temperature is called saturated solution. e.g. 36 g of sodium chloride in 100 g of water at 25°C forms saturated solution. (ii) **Unsaturated solution:** Unsaturated solution is one that contains less solute than that of the saturated solution at a given temperature. e.g. 10 g or 20 g or 30 g of Sodium chloride in 100 g of water at 25°C forms an unsaturated solution.	2 2
16	% of N2 = $\frac{mass\ of\ nitrogen}{molar\ mass\ of\ NH3}$	1	26	a) Cathode – pure copper Anode – impure copper	3+1

	= 82%	1		Electrolyte – copper sulphate solution with sulphuric acid b) $0.77A^0$	
17	Molecule = $\frac{avogadro\ number\ x\ given\ mass}{gram\ molecular\ mass}$ 0.06023×10^{23} (or) 6.023×10^{21} molecule	1 1	27.	Answer in detail (any 2) Factor affecting solubility i) Nature of solute and solvent ii) Temperature (endothermic, exothermic) iii) Pressure	7
18	Equal volume all the gases contains equal no. of molecule under STP Volume = Molecule	2	28	a) Metal a is copper Action of Air and Moisture: Copper gets covered with a green layer of basic copper carbonate in the presence of CO_2 and moisture. $2\,Cu + O_2 + CO_2 + H_2O \rightarrow CuCO_3.Cu(OH)_2$ $Cu + 2\,H_2SO_4 \rightarrow CuSO_4 + SO_2\uparrow + 2\,H_2O$ A – copper B- basic copper carbonate C – Copper sulphate D - Sulphur Dioxide b) Fluorspar To reduce the fusion temperature	5 2
			29	Modern atomic theory (seven points)	7
			30	a) Smelting: Smelting is the process of reducing the roasted metallic oxide from the metal in its molten condition. In this process, impurities are removed as slag by the addition of flux. a) A – aluminium B – Aluminium oxide $4\,Al + 3\,O_2 \rightarrow 2\,Al_2O_3$(Aluminium oxide) b) No .of moles = $\frac{no.of\ molecules}{avogadro\ number}$ = 0.25 mole	3 2 2

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