GOVT. HR SEC SCHOOL- SATHANKULAM		
PRE QUARTERLY EXAMINATION-2024		
XII - STD	CHEMISTRY	MARKS : 70
12.09.2024	ROLL NO:	TIME : 3.00Hrs

PART – I CHOOSE THE BEST ANSWER 15 X 1 = 15

1) Which one of the following is not correct?

a)Atomic radii of Zr and Hf are same because of lanthanoid contraction

b) La is actually an element of transition metal series rather than lanthanoid series

c) In lanthanoid series ionic radius of Ln^{3+} ions decreas d)$La(OH)_3$ is less basic than $Lu(OH)_3$

2) The oxidising agent used in swern oxidation is

a) Fenton's reagent b) dimethyl sulphoxide c) alkaline $KMnO_4$ d) Periodic acid

3) What is the pH of the resulting solution when equal volumes of 0.1M NaOH and 0.01M HCl are mixed?

a) 12.65 b) 7.0 c) 3 d) 2.0

4) The correct order of increasing acid strength is

a) $CH_3COOH < ClCH_2COOH < Cl_2CHCOOH < CCl_3COOH$

b) $CH_3COOH < CCl_3COOH < Cl_2CHCOOH < ClCH_2COOH$

c) $CCl_3COOH < Cl_2CHCOOH < ClCH_2COOH < CH_3COOH$

d) $ClCH_2COOH < CCl_3COOH < Cl_2CHCOOH < CH_3COOH$

5) The stability of +1 oxidation state increases in the sequence

a) Ga< In < Al < Tl b) Al < Ga < In < Tl c) In < Tl < Ga < Al d) Tl < In < Ga < Al

6) All the metals in the periodic table only_____ crystallizes in simple cubic pattern.

a) Uranium b) Titanium c) Radium d) Polonium

7) ASSERTION: rate of reaction doubles when the concentration of the reactant is doubles if it is a first order reaction.

REASON: rate constant also doubles

a) Both assertion and reason are true and reason is the correct explanation of assertion.

b) Both assertion and reason are true but reason is not the correct explanation of assertion

c) Assertion is true but reason is false d) Both assertion and reason are false.

8) cinnabar is converted in to mercury by

a) Reduction by metal b) Reduction by hydrogen c) Reduction by carbon d) Auto reduction

9) In which of the following reactions new carbon – carbon bond is not formed?

a) Aldol condensation b) Friedel craft reaction c) Kolbe's reaction d) Wolf kishner reduction

10) The yellow colour in NaCl crystal is due to

a) excitation of electrons in F centers b) refraction of light from Na+ ion

c) reflection of light from Cl^- ion on the surface d) all of the above

11) On reacting with neutral ferric chloride, phenol gives

a) dark green b) red colour c) violet colour d) no colouration.

12) Which of the following gives rotten egg smell

a) P_2O_5 b) PH_3 c) H_3PO_4 d) PCl_5

13) If 99.9% of a first order reaction was completed in 60 minutes , 90% of the same reaction under the same conditions would be completed in

a) 20 minutes b) 30 minut c) 6 minutes d) 10 minutes

14) Permanganate ion has tetrahedral geometry in which the central Mn^{7+} is _____hybridised.

a) sp^3 b) dsp^2 c) d^3s d) d^2sp^3

15)In the electrolytic refining of copper, which one of the following is used as anode?

a) Platinum electrode b) Carbon rod c) Pure copper d) Impure copper

PART - II

ANSWER ANY SIX QUESTIONS. QUESTION NO 24 ARE COMPULSORY. 6 X 2 = 12

16) What are the various steps involved in the extraction of pure metals from their ores?

17) How will you identify borate radical? 18) What is the hybridisation of iodine in IF_7? Give its structure .19) What is Zeigler-Natta catalyst?

20) What is meant by the term coordination number? What is the coordination number of atoms in a bcc structure? 21) Explain common ion effect with an example?

22) Explain phthalic fusion reaction? 23) What is urotropine? How it is prepared?

24) A first order reaction is 40% complete in 50 minutes. Calculate the value of the rate constant. In what time will the reaction be 80% complete?

PART – III ANSWER ANY SIX QUESTIONS. QUESTION NO 33 ARE COMPULSORY. 6X3=18

25) Write the extraction of silver by cyanide leaching? 26) Give the uses of silicones?

27) What is Aquaregia? Give uses? 28) Write the chromyl cloride test?

29) Calculate the percentage efficiency of packing in case of body centered cubic crystal?

30) Explain the effect of catalyst on reaction rate with an example.

31) Derive an expression for Ostwald's dilution law? 32) Write the mechanism of cannizaro reaction?

33) How are the following conversions effected

a) propanal to butanone b) Benzaldehyde to Benzoin

PART – IV ANSWER ALL THE QUESTIONS. 5 X 5 = 25

34 a i) What is blistered copper? ii) Explain zone refining process with an example?
(OR)

b i) Write the industrial preparation of aluminium by McAfee Process? ii) Describe the structure of diborane?

35 a i) Sulphuric acid is a dibasic. Prove it? ii) What are interhalogen compounds? Give properties (OR)

b i) Draw the structure of chromate ion and dichromate ion? ii) What is lanthanoid contraction? Expain it's consequences?

36 a i) Explain schottky defect? ii) Write the difference between amorphous solid and crystalline (OR)

b i) Explain the buffer action in a basic buffer containing equimolar ammonium hydroxide and ammonium chloride.

ii) Write the expression for the solubility product of $Ca_3(PO_4)_2$ and Hg_2Cl_2

37 a i) Describe the graphical representation of first order reaction.

ii) Define half life of a reaction. Derive a first order reaction half life is independent of initial concentration (OR)

b i) Write the preparation of acrolein? ii) Differentiate 1°, 2°, 3° alcohols by victor meyer test?

38 a i) Write a short note on reducing property of formic acid?

ii) What is formalin?Uses?

(OR)

b) A Compound (A) with molecular formula C_2H_3N on acid hydrolysis gives(B) which reacts with thionylchloride to give compound(C). Benzene reacts with compound (C) in presence of anhydrous $AlCl_3$ to give compound(D). Compound (D) on reduction with Zn/Hg and Conc.HCl gives (E). Identify (A), (B), (C), (D) and (E). Write the equations.