GOVT. HR SEC SCHOOL- SATHANKULAM		
PRE QUARTERLY EXAMINATION-2024		
XII - STD	CHEMISTRY	MARKS : 70
04.09.2024	ROLL NO:	TIME : 3.00Hrs

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

1) The incorrect statement among the following is

a) Nickel is refined by Mond's process b) Titanium is refined by Van Arkel's process

c) Zinc blende is concentrated by froth floatation d) In the metallurgy of gold, the metal is leached with dilute sodium chloride solution

2) The basicity of pyrophosphorous acid ($H_4P_2O_5$) is

a) 4 b) 2 c) 3 d) 5

3) In the froth-floatation process the collectors such as sodium ethyl Xanthate are enhances.

a)Non –wettability of the mineral particles in froth b)Non –wettability of the mineral particles in water

c)Non –wettability of the gangue particles in froth d)Non –wettability of the gangue particles in water.

4) The compound that is used in nuclear reactors as protective shields and control rods is

a) Metal borides b) metal oxides c) Metal carbonates d) metal carbide

5) The cation leaves its normal position in the crystal and moves to some interstitial position, the defect in the crystal is known as

a) Schottky defect b) F center c) Frenkel defect d) non-stoichiometric defec

6) Quartz is an example of

a) Ino silicates b) Phyllo silicates c) Tecto silicates d) Chain silicates

7)Which of the following compounds can be used as antifreeze in automobile radiators?

(a) Methanol (b) ethanol (c) Neo-pentyl alcohol (d) ethan-1,2-diol

8) How many moles of I_2 are liberated when 1 mole of potassium dichromate react with potassium iodide?

a) 1 b) 2 c) 3 d) 4

9)Which one of the following is an example of pseudo first order reaction?

a)Acid hydrolysis of ester **b)Decomposition of HI**
c)Synthesis of NH_3 **d)All radioactive transformations.**

10)If 75% of a first order reaction was completed in 70 minutes , 50% of the same reaction under the same conditions would be completed in

a) 20 minutes **b) 30 minutes** **c) 35 minutes** **d) 75 minutes**

11) The aqueous solutions of sodium formate, anilinium chloride and potassium cyanide are respectively
a) acidic, acidic, basic **b) basic, acidic, basic** **c) basic, neutral, basic** **d) none of these**

12)Percentage of Schottky defect in VO(Vanadium Mono oxide) crystal are

a)14 % **b)15%** **c)16%** **d)18%**

13) The product formed by the reaction of an aromatic aldehyde with primary amines is:

(a) Schiff's base **(b) Carboxylic acid** **(c) Ketone** **(d) Aromatic acid**

14)Which of the following represents the correct order of acidity in the given compounds?

(a) $FCH_2COOH > CH_3COOH > BrCH_2COOH > ClCH_2COOH$ (b) $FCH_2COOH > ClCH_2COOH > BrCH_2COOH >$ (c) $CH_3COOH > ClCH_2COOH > FCH_2COOH > BrCH_2COOH$ (d) $ClCH_2COOH > CH_3COOH > BrCH_2COOH > FCH_2COOH$

15) The IUAPC name of hydroxyquinol is

a) 1,2,3 – dihydroxy benzene b) 1,2,4 – dihydroxy benzene

c) 1,3,5 – dihydroxy benzene d) 1,2,5 – dihydroxy benzene

PART - II

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

16) Write the refining of Titanium by Van-Arkel method?

17) Write the anomalous behaviour of first elements of the p-block elements?

18) Why HF can not stored in glass bottle? 19) Draw the structure of chromate ion, dichromate ions?

20) Write the bragg's equation? Give terms? 21) What is common ion effect? Example?

22) Write the test for Alcohols and phenols? 23) Write trans esterification reaction?

24) Show that in case of first order reaction, the time required for 99.9% completion is nearly ten times the time required for half completion of the reaction.

PART – II

ANSWER ANY SIX QUESTIONS. QUESTION NO 33 ARE COMPULSORY**.** **6 X 3 = 18**

25) Explain the gravity separation process? **26) Describe briefly the catenation property of carbon?**

27) Write short note on Aquaregia? **28) Write the preparation of potassium dichromate?**

29) Distinguish between hexagonal close packing and Cubic close packing?
30) Give examples for Zero order reaaction? Give graphical representation?

31) Derive Henderson Hasselbatch equation? **32) Write short note i) Dye test ii) Schotten baumann reaction** **33) A Compound (A) with molecular formula C_2H_3Non 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). Identify (A), (B), (C), (D). Write the equation.**

PART – IV

ANSWER ALL THE QUESTIONS. 5 X 5 = 25

34 a i) Describe the structure of Diborane . **ii)Write the uses of potash alum** **(OR)**

b i)Explain electrolytic refining process with an example. **ii) What is auto reduction?**

35 a i) Write a short note on Holme's signal ii) Write the preparation of Nitric acid by ostwald's process (OR) b i) What is chromyl chloride test? ii) Define lanthanoid contraction?Give causes?

36 a i) Calculate the packing efficiency of BCC crystal ii) Give reason : ZnO turns on yellow on heating? (OR) b i) Define half life of a reaction?. Show that for a first order reaction half life is independent of initial concentration. ii) How do concentrations of the reactant influence the rate of reaction?

37 a i) Explain the buffer action in a basic buffer containing equimolar ammonium hydroxide and ammonium chloride **ii) Define buffer index?** **(OR)**

b i) Write the preparation of phenol from cumene? ii) What is kolbe's reaction?

38 a i) How to distinguish 1°, 2°,3° alcohols by victor meyer test ii) Write the mechanism for Aldol condensation **(OR)**

b) An organic compound(A) of molecular formula C_6H_6O gives purple colouration with neutral $Fecl_3$ .Compound (A) reacts with benzene diazonium chloride to give an orange red dye (B) and it also reacts with Zn dust to form compound (C).Compound (A) on reaction with NaOH and CH_3I gives compound (D). Identify A,B,C and D. Explain the reactions