Std : 12	*pre half yearly model question paper*	*Sub* : *Chemistry*
Tot Marks :70	R.VEERAMANI,9087830704	Time: 3 Hrs

I) Choose the correct answers : **15x1 =15**

1) Crystal field stabilization energy for high spin d^5 octahedral complex is
a)$-0.6\Delta_o$ b)0 c)$2(P-\Delta_o)$ d) $2(P+\Delta_o)$

2) The element that shows lowest catenation among the following p-block element is
a) Carbon b) Silicon c) Lead d) Germanium

3)

	1	2	3	4
(a)	A	B	C	D
(b)	B	A	C	D
(c)	B	A	D	C
(d)	D	C	B	A

Ores		Formula	
1	Copper pyrite	A	$CuCO_3.Cu(OH)_2$
2	Malachite	B	$CuFeS_2$
3	Azurite	C	Cu_2O
4	Cuprite	D	$2CuCO_3.Cu(OH)_2$

4) Which of the following electrolytic solution has the least specific conductance
a) 2N b) 0.002N c) 0.02N d) 0.2N

5) Formula of hyponitrous acid
a) HOONO b) $H_2N_2O_2$ c) HNO_2 d) HNO_4

6) Element with half filled orbitals
a) La b) Gd c) Cm d) Lu

7) The yellow colour in NaCl crystal due to
a)Excitation of electron in F centres b) Reflection of light from Cl^- ion on the surface
c) Refraction of light from Na^+ ion d) All of these

8) After 2 hrs , a radioactive substance becomes $\left(\frac{1}{16}\right)^{th}$ of original amount. Then the half life time (in min) is a) 60 minutes b) 120 minutes c) 30 minutes d) 15 minutes

9) The chemical name of vitamin c
a) Retinol b) Thiamine c) Biotin d) Cyanocobalamine

10) Cellulose is an example of natural polimer
a) Synthetic b)Natural c) Semisynthetic d) None of these

11) Two molecules of propane nitrile in the presence of Na/ether to form 3-imino-2-methyl propane nitrile . This reaction is known as
a) Baltz-Siemann reaction b) Thorpe nitrile condensation
c) Gomberg reaction d) Schotten-Baumann reaction

12) Nef carbonyl synthesis given by
a) C_6H_5CHO b) $C_6H_5NO_2$ c) $C_6H_5NO_2$ d) All of these

13) Oxidation of ethylene glycol with HIO_4 gives
a) COOH b) CHO c) HCOOH d) HCHO
| |
COOH CH_2OH

14) **Assertion:** Due to Frenkel density , density of Crystalline solid no changes
Reason : Frenkel defect cation and anion leaves the crystal
a)Both assertion and reason are true and reason is the correct explanation of assertion. b) Both assertion and reason are true and reason is not correct explanation of assertion.
c) Assertion is true but reason is false d) Both assertion and reason are false

15) If ionic product < solubility product then the solution is
a) Saturated b) Unsaturated c) Super saturated d) None of these

II) Answer any 6 of the following (Q.No 24 compulsory) 6X2 =12

16) Give the difference between double salts and coordination compounds.
17) Explain the effect of catalyst on reaction rate with an example.
18) Explain auto oxidation of ethers
19) What is nano catalyst? Give ex
20) Calculate the molar conductance of 0.025M aqueous solution of calcium chloride at 25° C. The specific conductance of calcium chloride is 12.04×10^{-2} Sm^{-1}.
21) Explain Kolbe's electrolytic method
22) How is Terylene prepared
23) Explain Frenkel defect
24) Complete the following reaction
a) $H_2B_4O_7 \longrightarrow ?$
b) $MnO_4^- + Fe^{2+} \longrightarrow ?$

III) Answer any 6 of the following (Q.No 33 compulsory) 6 X 3 =18

25) Explain electrolytic refining of silver.
26) Write the ionic equation for the reaction b/n $Cr_2O_7^{2-}$ and Fe^{2+} ions in acidic medium.
27) (i) How is TNG prepared? (ii) How is crotanaldehyde prepared ?
28) Write a note on vulcanisation of rubber
29) Derive Arrhenius equation to calculate the activation energy from rate constant k_1 and k_2 at temperature T_1 and T_2 respectively.
30) Write the characteristics of adsorption.
31) What are food preservatives and Antioxidants.
32) Write a short notes on the following
a) Gabriel phthalimide synthesis b) Gomberg reaction
33) Write IUPAC name for the following compounds
a) $K_2[Fe(CN)_3(Cl)_2NH_3]$ b) $[Cr(NH_3)_3(NC)_2(H_2O)]^+$ c) $[Cu(NH_3)_2Cl_2]$

III) Answer ALL the following : **5 X 5 = 25**

34) a) Explain the action of mechanism of soap and detergent.

(OR)

b) Explain the Mechanism esterification reaction.

35) a) Write a note on zeolites (3m)

b) What are ionisation isomers (2m)

(OR)

c) Explain the rate determining step (2m)

d) Explain cyclic structure of Glucose .

36) a) Describe adsorption theory of catalyst. (3m) b) Calculate the pH of 0.01M NaOH (2m)

(OR)

c) Explain the construction of Daniel cell (3m)

d) $[Ti(H_2O)_6]^{3+}$is coloured, while $[Sc(H_2O)_6]^{3+}$ is colourless- explain (2m)

37) a) What are limitations of Ellingham diagram(3m)

b) Nitrobenzene in to Anisole (2m)

(OR)

c) What are the properties of interhalogen compounds (3m)

d) How the Tranquilizers work in body (2m)

38) a) An organic compound (A) with molecular formula C_6H_7N gives (B) with HNO_2/HCl at 273K.The aqueous solution of (B) on heating gives compound (C) which gives violet colour with neutral $FeCl_3$.Identify the compounds (A),(B) and (C) and write the equation.(3m)

b) The rate constant for a first order reaction is 1.54×10^{-3} s^{-1}. Calculate its half life time (2m)

(OR)

c) What is Formalin solution? Give it's uses. (2m)

d) Ionic conductance at infinite solution of Al^{3+} and SO_4^{2-} are 189 and 160 mho cm^2 $equiv^{-1}$. Calculate the equivalent and molar conductance of the electrolyte $Al_2(SO_4)_3$at infinite solution.

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