HIGHER SECONDARY SECOND YEAR

CHEMISTRY

MODEL QUESTION PAPER-II

TIME : 2.30 HOURS   **MARKS : 70**

SECTION-I

Note: **(i) Answer all the questions.**   **15 × 1 = 15**

(ii) Choose the most suitable answer from the given four alternatives.

1. Consider the following statements.

    (i) Alkali metals have highest ionization potential

    (ii) f- electron has the minimum screening effect

    (iii) Electron-affinity is inversely proportional to its size.

    which of the following statements is/are correct.

    (a) I and III   (b) I and II

    (c) I,II and III   (d) II and III

2. The compound with garlic odour is

    (a) P_2O_3 (b) P_2O_5

    (c) H_3PO_3 (d) H_3PO_4

3. Match the List-I and List- II correctly by using the code given below:

	List I		List II
(A)	Brass	(1)	Surgical instruments
(B)	Stellite	(2)	Skin Ointment
(C)	Lunar caustic	(3)	Condenser tube
(D)	Calamine	(4)	Hair dyes

    Codes:

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

4. The Co-Ordination number of Ni(II) in $[Ni(CN)_4]^{2-}$ is

    (a) 2   (b) 4   (c) 5   (d) 6

5. The $t_{1/2}$ of a particular decay is 69.32 years. The decay constant is

    (a) 100 per year   (b) 10 per year

    (c) 0.01 per year   (d) 0.1 per year

6. The network done by the system is given by
   (a) w-pΔv   (b) w+pΔ v
   (c) -w +pΔv   (d) -w-pΔv

7. If ΔG for a reaction is negative, the change is
   (a) Spontaneous   (b) Non-Spontaneous
   (c) Reversible   (d) Equilibrium.

8. The sum of the powers of the concentration terms that occur in the rate equation is called.
   (a) molecularity   (b) Order   (c) rate   (d)   rate constant

9. Haze is an example of

   (a) Solid dispersed in gas   (b) gas dispersed in liquid

   (c) gas dispersed in gas   (d) solid dispersed in liquid

10. Three juice samples A,B,C have the p^H value as shown. Then the correct order of their[H^+] ion concentration is

JUICE	JUICE	JUICE
(A)	(B)	(C)
P^H=1	P^H=2	P^H=3

    (a) A>B>C   (b) A=B=C
    (c) A<B<C   (d) A>B=C

11. When phenol is distilled with Zinc dust it give
    (a) Benzaldehyde   (b) Benzoic acid
    (c) Toluene   (d) Benzene

12. Diethylether and methyl n-propyl ether are
    (a) functional isomers   (b) optical isomers
    (c) Metamers   (d) Tautomers

13. From which of the following, tertiary butyl alcohol is obtained by the action of methyl magnesium iodide?
    (a) HCHO   (b) CH_3 CHO   (c) CH_3 $COCH_3$ (d) CO_2

14. Ethane can be prepared from sodiumacetate by
    (a) Clemmenson reduction   (b) Hydrogenation
    (c) decarboxylation   (d) Kolbe's electrolysis

15. Statement (I): Trimethylamine is less basic than dimethylamine.
    Statement(II): Trimethylamine has steric over crowding of methyl group than dimethylanine.
   (a) Statement (I) is correct but statement (II) is false

(b) Statement (I) and (II) are correct and Statement (II) is the correct explanation of Statement (I)

(c) Statement (I) is false but Statement (II) is correct.

(d) Statement (I) and (II) are correct and Statement (II) is not correct explanation of Statement(I).

Section - II

Answer any six questions and question number 20 is compulsory. $6 \times 2 = 12$

16. He_2 molecule is not formed, why?

17. Lead pipes are not used in supplying drinking water why?

18. Identify the central metal ion and ligand in the given complex $[Cr (en)_3]cl_3$

19. State Bragg's law.

20. Consider the potential energy diagrams of reaction I and II predict which reaction will go faster and why?
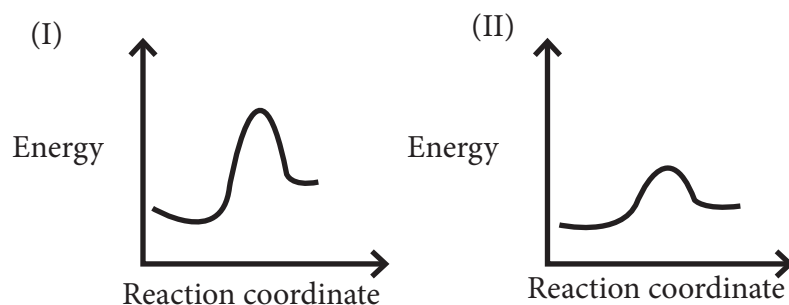
21. Define the following terms anode and cathode in an electrochemical cell.

22. Reason out cis isomer is less stable than trans isomer.

23. What is isoelectric point?

24. What are analgesis? Give an example.

Section - III

Answer any six questions and question No 25 is compulsory. $6 \times 3 = 18$

25. Arrange the following as directed.
    (a) Increasing order of size: $O^{2-}, F^-, Mg^{2+}, Na^+$
    (b) Increasing order of first Ionization potential: Li, Be, B
    (c) Increasing order of size: Fe^{2+}, Fe, Fe^{3+}

26. Complete following:
    (i) $Zn + HNO_3$ (dil) $\rightarrow$

(i) $CuSO_4 + KCN \rightarrow$
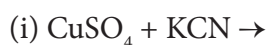
27. Distinguish between Lanthanides and Actinides.

28. Explain the nature of glass.

29. Write notes on ultrafiltration.

30. Calculate the P^H of 0.1m CH_3COOH Solution. Dissociation constant of acetic acid is 1.8×10^{-5} M.

31. How does ethyleneglycol react with.

    (a) con. H_3PO_4

    (b) anhydrous Zinc chloride.

32. Give the methods of preparation of anisole.

33. Explain the mechanism of claisen schmidt reaction.

Section - IV

Answer all questions   5 X 5 = 25

34. (i) Derive De-Broglie relation.   (3)

    (ii) Electron affinity of noble gases are zero why?   (2)

    (or)

    (i) How are noble gases separated from air by Ramsay Raleigh method.

    (ii) Comparing $La(OH)_3$ and $Lu(OH)_3$, which is more basic and why?. (2)

35. (i) Explain the extraction of silver from its ore.   (3)

    (ii) Account for the following "transition elements form complexes".   (2)

    (or)

    (i) Write the postulates of Werner's theory   (3)

    (ii) Define Q value of a nuclear reaction.

36. (i) write the properties of ionic crystal.   (2)

(ii) Explain the characteristic of entropy. (3)

(or)

(i) Explain the effect of temperatures on the following equilibrium reaction. (2)

$$N_2O_{4\,(g)} \rightleftharpoons 2NO_{2\,(g)} \qquad \Delta H = +59.0 \text{ KJ/mo1}$$

(ii) Show that the time taken for 99.9% completion of first order reaction is 10 times its half life period. (3)

37. (i) Discuss the Quinonoid theory of indicators. (3)

(i) Which of the following reaction will occur and why? (2)

$$Zn + 2H^+ \text{ (dil. } H_2SO_4) \rightarrow Zn^{2+} + H_2$$

$$Cu + 2H^+ \text{(dil. } H_2 SO_4) \rightarrow Cu^{2+} + H_2$$

(or)

(i) Distinguish between Racemic and meso form. (3)

(ii) How will you convert

(a) Chlorobenzene to phenol

(b) Phenol to Benzene. (3)

38. (i) Explain the reaction of lactic acid with
(a) dil H_2SO_4 (b) PCI_5 (3)
(ii) Explain Gabriela pthalimide synthesis. (3)
(or)
(i) Explain briefly the characteristics of rocket propellant. (3)
(ii) Give any two functions of lipids in biological system. (2)