

I YEAR CHEMISTRY IPE QUESTION PAPER – MARCH 2010

**SECTION - A**

I. Answer all the following :

10 × 2 = 20

1. What are the coordination numbers of NaCl and CsCl crystals ?
2. What is the effect of hydrogen bonding on boiling points ?
3. What are disproportionation reactions ? Give an example.
4. What is Deuterolysis ? Give an example.
5. Give the formulae of Barytes and Dolomite.
6. What is the kinetic energy of 5 moles of  $N_2$  gas at  $27^\circ C$  in calories ?
7. Name two important sinks for carbon dioxide.
8. Define C.O. D and B.O.D
9. Write the structures of the following compounds.
  - (a) 3 – chloro – 4 – methyl hexane
  - (b) 2 – Methoxy – 3, 3 – dibromo – 1- pentanol
10. What is functional group isomerism ? Give an example.

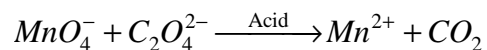
**SECTION - B**

II. Answer any six of the following :

6 × 4 = 24

11. Explain  $sp^3d^2$  hybridization with an example.
12. Write the reactions of Diborane with the following along with equations.
  - (a)  $NH_3$  at  $120^\circ C$  and  $200^\circ C$
  - (b) HCl in the presence of  $AlCl_3$
13.  $100\text{cm}^3$  of  $CO_2$  gas is diffused in 25 seconds through a porous membrane. How much time does the same volume of sulphur dioxide gas take to diffuse.

14. Balance the following reaction by Ion – electron method.



15. Describe the electrolytic method for the preparation of  $\text{H}_2\text{O}_2$

16. Mention the hybridizations of Xenon in  $\text{XeF}_4$  and  $\text{XeF}_6$  and give their structures.

17. Describe the preparation of NaOH by Nelson cell.

18. What is Blue gas ? How is it prepared ?

### SECTION - C

III. Answer any two of the following :

2 × 8 = 16

19. What are Quantum numbers ? Explain the significances of various types of quantum numbers.

20. Define  $I.P_1$  and  $I.P_2$ . Why  $I.P_2$  is greater than  $I.P_1$  ? Discuss four factors effecting I.P. values of elements.

21. a) Describe any two methods for the preparation of Ethylene.

b) i) How  $\text{C}_2\text{H}_2$  reacts with HCl ? Give the equation.

ii) How  $\text{C}_6\text{H}_6$  reacts with  $\text{C}_2\text{H}_5\text{Cl}$  in the presence of anhydrous  $\text{AlCl}_3$  ? Give the equation.