

## 12<sup>th</sup> Chemistry - 1<sup>st</sup> Volume Test Paper

I) Answer any 5 question (Q.no 5 compulsory) 5x2=10

- 1) Which type of ores can be concentrated by froth floatation method? Give two examples for such ores.
- 2) Describe briefly allotropism in p- block elements with specific reference to carbon.
- 3) Write a note on Fisher tropesch synthesis.
- 4) What happens when  $\text{PCl}_5$  is heated?
- 5) Why iron is more stable in +3 oxidation state than in +2 and the reverse is true for Manganese?
- 6) What are point defects?
- 7) Define rate law and rate constant.

II) Answer any 5 question (Q.no 8 compulsory) 5x3=15

- 8) 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?
- 9) What is meant by the term "coordination number"? What is the coordination number of atoms in a bcc structure?
- 10) Distinguish tetrahedral and octahedral voids.
- 11) What is crystal field stabilization energy (CFSE)?
- 12) What is lanthanoid contraction and what are the effects of lanthanoid contraction?
- 13) What is the hybridisation of iodine in  $\text{IF}_7$ ? Give its structure.
- 14) How will you convert boric acid to boron nitride?

III) Answer the following 5x5=25

- 15) a) i) Give the uses of zinc.  
ii) Describe a method for refining nickel. (or)
- b) Describe the structure of diborane.
- 16) a) i) Give the structure of CO and  $\text{CO}_2$   
ii) Write a note on zeolites. (or)
- b) i) Define Deacon's process.

ii) write uses of chlorine

17) a) Compare lanthanoids and actinoids. (or)

b) i) Out of  $\text{Lu}(\text{OH})_3$  and  $\text{La}(\text{OH})_3$  which is more basic and why?

ii) Why Europium (II) is more stable than Cerium (II)?

18) a) Describe werner theory. (or)

b) Calculate the percentage efficiency of packing in case of body centered cubic crystal.

19) a) Write short note on metal excess and metal deficiency defect with an example. (or)

b) Derive integrated rate law for a zero order reaction  $\text{A} \rightarrow \text{product}$ .

