

(Final Examination - 2016)

Class - XI

F.M. : 70

Time : 3 Hrs.

- Q. 1. Define Normality and Molarity? (1)
- Q. 2. Which experiments prove that atoms are wave in nature? Give any two Experiments. (1)
- Q. 3. What do you mean by the terms (1)
- E.N.C.
 - Electronegativity
- Q. 4. What is the principle of precipitation? (1)
- Q. 5. What is the chemical formula for Hydrolith? Give any one of its uses. (1)
- Q. 6. Which has a greater electron affinity fluorine or chlorine? Give reasons. (1)
- Q. 7. Write short notes on Le Chatelier's Principle? (1)
- Q. 8. What are magic numbers and why are they called so? (1)
- Q. 9. Write down the electronic configuration of Cu. (1)
- Q. 10. When does a chemical reaction said to be in equilibrium? (1)
- Q. 11. Convert the following :- (12)
- Ethane to Benzene
 - Ethyne to Tertiary Butyl Alcohol
 - Ethane to Methane
 - Ethane to Glyoxal
 - Ethane to Acetaldehyde
 - Methane to Ethyne
- Q. 12. Write down hybridized structure of the following :- (6)
- C_2H_2
- XeF_4
- PCl_5
- Q. 13. Prove that O_2 is paramagnetic using molecular orbital theory? (3)
- Q. 14. Give all the reactions involved in the preparation of washing soda by Solvay's Process. (3)
- Q. 15. Explain the various steps involved in the extraction of Mg by Dow's Process (3)
- Q. 16. A sample of Na_2CO_3 , H_2O weighing 0.62 g is added to 100ml of 0.1N H_2SO_4 . Will the resulting solution be acidic, basic, or neutral? (3)

Q.17. One litre of oxygen at NTP weighs 1.46g. How many litres of oxygen are needed for the combustion of 21.0g of Mg whose equivalent weight is $\frac{1}{2}$ mole? (3)

copy Q.18. Give reason why ice being solid floats on water? Explain Debye Force: (3)

Q.19. How is sodium extracted by Down's Process? Explain why temperature has to be lowered in the above process? (3)

Q.20. Alkali metals when dissolved in liquid NH_3 becomes blue in colour and a) and good conductor. (3)

b) Why alkaline earth metals always show (+2) oxidation states.

Q.21. Derive a relation between KP, KC and KX? Also explain the effect of inert gas on a chemical reaction? (6)

b) Prove that the pressure necessary to obtain 50% dissociation of PCl_5 is numerically 3 times of the value of KP.

Q.22. A mixture of FeO and Fe_3O_4 when heated in air to a constant weight gains 5% in weight. Find the composition of the initial mixture (Fe=56) (6)

Solⁿ b) A piece of aluminium weighing 2.7 g is heated with 75 ml of sulphuric acid (sp.gr. 1.18 containing 24.7% H_2SO_4 by weight) after the metal is carefully dissolved the solution is diluted 500ml. Calculate the molarity of the free H_2SO_4 in the resulting solution.

Q.23. The equilibrium constant of the reaction $\text{A}_2(\text{g}) + \text{B}_2(\text{g}) \rightleftharpoons 2\text{AB}(\text{g})$ at 100°C is 50. If a one litre flask containing one mole of A_2 is connected to a 2 litre flask containing 2 moles of B_2 , how many moles of AB will be found at 373K. (6)

b) 25 ml of hydrogen and 18 ml of iodine when heated in a closed container, produced 30.8 ml of HI at equilibrium. Calculate the degree of dissociation of HI at the same temperature.