

Note: Time allowed for section B and C is 2 hours and 40 minutes.

SECTION "B"

Marks: 32

II. Attempt any EIGHT Parts out of the following. Each Part carries equal marks.

- i. Calculate the unit of equilibrium constant K_c for the following reaction.
$$\text{N}_2\text{O}_4(\text{g}) \rightleftharpoons 2 \text{NO}_2(\text{g})$$
- ii. Calculate the PH and POH of 0.5M solution of HCl?
- iii. Define functional group? Give two examples of functional group containing oxygen.
- iv. How would you test that alkene undergo an addition reaction?
- v. Briefly describe the sources and deficiency symptoms of Vitamin A?
- vi. Identify different sources of Protein? Also list the four uses of protein?
- vii. What are the adverse effects of global warming?
- viii. Describe briefly how ozone layer is depleted in the atmosphere?
- ix. Explain briefly occurrence of water?
- x. Make the distinction between soft and hard water.
- xi. Write down at least four uses of Urea?

SECTION "C"

Marks: 21

Note: Attempt any THREE questions of the following. Each question carries equal Marks.

- III. (a) Define law of mass action and derive an expression for the equilibrium constant. 4
(b) Write down three types of salts with examples. 3
- IV. (a) Write down general characteristics of organic compounds in detail. 4
(b) Write balanced equation for the following. 3
(i) Ethene with Bromine (ii) Ethene with hydrogen (iii) Ethene with KMnO_4
- V. (a) Distinguish between monosaccharides, disaccharides and polysaccharides with examples. 3
(b) Write down Effect of Acid rain on. 4
(i) Fishes (ii) Plants (iii) Material (iv) Human
- VI. (a) Write down reaction of water with. 4
(i) K (ii) Cl_2 (iii) CaO (iv) CH_3COONa
(b) Write down basic reactions for manufacture of sodium carbonate by Solvay's process. 3