

Model paper

B.Sc SEMESTER II, GENERIC ELECTIVE-2 (Chemistry)

GROUP-A

- 1- Write the equilibrium constant expressions for K_C and K_P for each
(a) $\text{Co (g)} + \text{H}_2\text{O (g)} \rightarrow \text{CO}_2\text{(g)} + \text{H}_2\text{(g)}$. (b) $\text{PCl}_3\text{(g)} + \text{Cl}_2\text{(g)} \rightarrow \text{PCl}_5\text{(g)}$
- 2-Define (i) Standard enthalpies of formations. (ii) Bond dissociation energy
- 3-Write Friedel Crafts alkylation and acylation reactions.
- 4- How is phenol prepared from: = (i) Cumene (ii) Benzene diazonium chloride.
- 5-State and explain Kirchhoff's equation.
- 6- Write note on Buffer solution.

GROUP-B

- 7-Discuss degree of ionization, ionization constant and ionic product of water.
- 8- Accounts for the following: (a) Phenol is more easily nitrated than benzene.
(b) Halo arenes and haloalkanes are polar compounds but insoluble in water.
(c) Methanol is miscible with water while iodomethane is not.
- 9-Write the method of preparation of phenol. Discuss nitration and halogenations of phenol.
- 10-Discuss salt hydrolysis and hydrolysis constant.
- 11- What do you mean by the law of conservation of energy? Derive the mathematical relationship of heat, internal energy & work.
- 12-write short notes on the following: - (i) Cannizzaros reaction, (ii) Benzoin condensation
(iii) Reimer-Tiemann reaction.