M.Sc. (FINAL) EXAMINATION, 2015

CHEMISTRY

VII-B Paper Group-A : Metal Complexes and Polymers

Time Allowed : Three Hours | Max. Marks : 100

Unit-I

1. (a) Write short notes on :—
   (i) Frank-Condon principle (ii) Bi molecular deactivation
   (b) Write the method obtaining charge transfer spectra.
2. Describe in brief the excited states of metal complexes in tetra hedral and octahedral geometries with suitable examples.

Unit-II

3. Discuss in brief Ruthenium and TiO_2 complexes as sensiti-zers.
4. Write notes on Redox reaction mechanism of transition metal mediated nitrogen fixation with suitable examples.

Unit-III

5. Write short notes on :—
   (a) (i) Co-ordination polymerization and
   (ii) Co-polymerization
   (b) Poly dispersity and molecular weight distribution. 10
6. Write short notes on the following with suitable examples
   (a) Polymerization conditions and Polymer reactions.
   (b) Experimental aspects of light scattering by polymer solutions.

Unit-IV

7. (a) Explain T_g and T_m and give the relationship between them.
   (b) Write short notes on zym
   (i) Blow molding techniques (ii) Thermoforming
8. Explain the following :—
   (a) Effects of molecular weights diluants
   (b) Film casting

Unit-V

9. Write notes on :—
   (a) electrically conducting polymers
   (b) Silicone polymers
10. Write short notes on any two :—
    (a) Contact lens (b) Artificial heart
    (c) Skin and blood cell