Unit IV

8. Discuss Bragg's equation and show how is it used in X-ray diffraction method to determine structure and crystallinity of the materials. 14

9. Discuss principal theory and application of Photocorrelation spectroscopy. 14

Roll No. .....

(07/21-II)

10298

M. Sc. EXAMINATION

(For Batch 2017 & Onwards)

(Fourth Semester)

CHEMISTRY

CHP(H)-403

Physical Special-VI

Time : Three Hours *Maximum Marks :* 70

Note : Q. No. 1 is compulsory and its all parts must be attempted in sequence (Section A). Further, attempt any *four* questions (14 marks each) by selecting *one* question from each Unit.

1. (a) What are Epoxy Resins ?

   (b) What are the monomers of Nylon 66 ?

(c) Write a brief note on Molecular size control of Polymer.

(d) What is the significance of low angle X-ray diffraction ?

(e) What is Electrophoresis ?

(f) How are rotational motions used to determine molecular weight ?

(g) What is the principle of Optical Rotatory Dichroism ? 7×2=14

Unit I

2. Write synthesis, properties and uses of the following commercial polymers : 5,5,4

(a) Polyvinyl chloride

(b) Polythene

(c) Polyester.

3. Write brief notes on the following : 7,7

(a) Fire Retarding polymers

(b) Electrical Conducting polymers.

Unit II

4. Discuss thermodynamics of Biopolymers solutions in detail. Give signification of different thermodynamic functions. 14

5. Discuss mechanism involved in Muscle contraction and write process of energy generation in mechanochemical system. 14

Unit III

6. Determine molecular weight determination of Biopolymers by sedimentation velocity method. Where does it give better results ? What are the advantages of this method ? 14

7. Discuss the following methods to evaluate molecular weight and hydration of biopolymers :

(a) Viscosity method

(b) Hydrodynamic method. 7,7