

[This question paper contains 2 printed pages.]

8316

Your Roll No.

B.Sc. Prog./III

JS

EL 310 (ii) – Polymer Science

(Admissions of 2005 & onwards)

Time : 2 Hours

Maximum Marks : 38

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt four questions in all.

Question No. 1 carries 8 marks and is compulsory.

All other questions carry 10 marks each.

1. Write the structure and applications of the following polymers :

(i) Nylon 6,10

(ii) Polyvinyl acetate

(iii) Polyvinyl chloride

(iv) Bakelite

(8)

2. (i) Write a short note on Tg.

(ii) How can you determine molecular weight of a polymer by viscosity method ?

P.T.O.

- (iii) What are the criteria for solubility of polymers ?
(2,5,3)
3. (i) Explain Flory-Hugins theory.
(ii) What is WLF equation ?
(iii) Write a short note on coordination polymerization.
(3,3,4)
4. (i) Describe the preparation and uses of polyaniline.
(ii) Describe the preparation and uses of Bakelite.
(6,4)
5. (i) Write a short note on elastomers.
(ii) Give the synthesis and uses of Nylon 6.
(iii) What are thermosetting thermoplastics ? Give one example of each.
(3,4,3)
6. In a polymer, 30% molecules have molecular mass 20,000, 40% molecules have molecular mass 30,000 and the rest 30% have 60,000. Calculate the number average, mass average molecular mass and polydispersity index. Also tell whether the polymer is monodisperse and polydisperse.
(10)