This question paper contains 3 printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : 1500

Unique Paper Code : 1141702 F-7

Name of the Paper : **Speciality Polymers**

Name of the Course : **B.Tech. (Polymer Science)**

Semester : **VII**

Duration : **3 Hours** Maximum Marks : **75**

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

Attempt *five* questions in all.

Question No. **1** is compulsory.

Draw neat and labelled diagram wherever necessary.

Attempt all parts together.

1. (*a*) List the importance of speciality polymers with examples.

(*b*) Write a note on biocompatibility in polymers.

(*c*) Explain the basic thermal insulation in polymers.

(*d*) Write the basic chemical reactions for the synthesis of polyphosphazines.

(*e*) Discuss the functional behaviour in a speciality polymers.

P.T.O.

(*f*) Discuss the impact of cross linking in unsaturated polyester.

(*g*) Comment on optical properties of PAI.

(*h*) List the industrial application of Polyoxymethylene (POM).

(*i*) State the application of polycarbonate in display purposes. 9×3

2. (*a*) Discuss the synthesis, properties and industrial application of silicone fluid.

(*b*) Discuss the structure of silicon elastomers along with its appplications. 8+4

3. (*a*) Discuss the thermal properties, processing and application of polyamide resins.

(*b*) Discuss the shrinkage in nylon fiber and its impact.

(*c*) Mechanical properties of Polydimethylsiloxane (PDMS). 6+3+3

4. (*a*) Discuss a method for preparation and important industrial application of polphenylene sulfide.

(*b*) Elaborate the use of special properties of PPO.

(*c*) Write a note on Liquid Crystalline polymers. 6+3+3

5. (*a*) Discuss a preparative methods of PEEK along with its various chemical properties.

(*b*) Describe the impact of cross linking in unsaturated polyester resins.

(*c*) Write a brief note on polyester panel. 4+4+4

6. Write the short notes on any *three* : 3×4

(*i*) Heat resistant polymers

(*ii*) Stimuli responsive polymer

(*iii*) Polyetherimide resins

(*iv*) Compressive strain response.