

22390

24225

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answer with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following: 10
- a) Enlist four different commodity polymers.
 - b) State four various properties of engineering polymers.
 - c) Enlist two polyamides with their raw materials in preparation.
 - d) List down four speciality polymers.
 - e) State the function of heat and light stabilizer with its example.
 - f) State the selection criteria of lubricants, Extenders. (Two each)
 - g) State the need of compounding.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Describe the manufacturing process of Polypropylene using ziegler Natta catalyst.
 - b) State the properties and applications of Acrylonitrile Butadiene styrene (ABS). (Four each)
 - c) Differentiate between thermoplastic and thermosetting polymers.
 - d) State the functions and examples of following additives –
 - i) Polymerizers, Plasticizers
 - ii) Fillers.
- 3. Attempt any THREE of the following:** **12**
- a) Draw the manufacturing flow sheet of PVC by stating its monomer/raw materials and processing conditions.
 - b) Enlist four properties and applications of PTFE.
 - c) Explain principle of manufacturing of Ethylene Vinyl Acetate (EVA).
 - d) Describe construction and working of Two roll mill for compounding.
- 4. Attempt any THREE of the following:** **12**
- a) Differentiate between PET and PBT.
 - b) State various sources of cellulose and enlist four applications of cellulose nitrate.
 - c) Explain the manufacturing of polyurethane in detail.
 - d) State the properties of Polyamide-imide Bismelamide. (Four each)
 - e) State the function and examples of following additives –
 - i) Impact modifier
 - ii) Blowing agent.

5. Attempt any TWO of the following:**12**

- a) Explain the manufacturing of PMMA with its four properties.
- b) Draw a manufacturing flow sheet of Nylon 6,6. State its four applications.
- c) Enlist four properties of following polymers –
 - i) SAN
 - ii) PPS
 - iii) PEEK.

6. Attempt any TWO of the following:**12**

- a) Explain manufacturing of HIPS in detail. State its four applications.
 - b) Differentiate between PF, UF, MF with respect to their manufacturing principle, properties and applications.
 - c) Draw a neat labelled sketch of Tumbler mixer, state its working principle.
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