

22390

23124

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 answers with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following :** **10**
- Write any two general properties of commodity polymers.
 - State principle of manufacturing of polyethylene.
 - Justify the need of compounding of PVC.
 - Express any two functions of Fillers.
 - Write the name of monomer of PPS.
 - State any two properties of melamine-formaldehyde.
 - Write any two applications of ABS.

P.T.O.

- 2. Attempt any FOUR of the following :** **12**
- a) Identify the properties of PMMA that make it suitable for contact lense.
 - b) Compare thermoplastic and thermosetting polymer.
 - c) Discuss with example of stereo regular polymer.
 - d) State the source of cellulose and list out derivatives of cellulose.
 - e) Write any three applications of PEEK.
- 3. Attempt any FOUR of the following :** **12**
- a) Differentiate between high speed mixer and Banbury mixer on the basis of construction and working.
 - b) Justify the selection of EVA polymer for ski boots.
 - c) Discuss with the season “Silicon Polymer is used to replacement of human bone structure”.
 - d) Justify the statement “Polycarbonate is transparent material.
 - e) Describe manufacturing process of polypropylene using ziegler-Natta catalyst process.
- 4. Attempt any THREE of the following :** **12**
- a) Elaborate a note on high impact polystyrene along with its specific applications.
 - b) Describe manufacturing process of polyethylene by using high pressure and low pressure.
 - c) State any four properties and applications of Polyphenyleneoxide.
 - d) Compare polymide - imide and Bimelamide on the basis of properties.
 - e) Explain the functions of Blowing agents and Extenders.

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

- a) Explain with neat sketch of Two roll mill.
- b) Describe the need of polymerizers and heat stabilizers.
- c) Describe manufacturing process of styrene acrylonitrile.
- d) Compare polyethylene terphthalate and poly butylenes terphthalate on the basis of properties.
- e) Describe manufacturing process for cellulose nitrate along with its applications.

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

- a) Describe manufacturing process of Polyvinyl alcohol along with its flow-sheet.
 - b) Explain manufacturing flow sheet of Nylone-66. Also state its two applications and properties.
 - c) Discuss manufacturing and justify the reason “PF resin is used in adhesives”.
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