

22354

21819

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) Assume suitable data, if necessary.
 - (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE :

10

- (a) Name the processes by which HDPE and LDPE are manufactured.
- (b) List any two sources for obtaining cellulose.
- (c) Name the engineering plastics known for
 - (i) high impact strength
 - (ii) high heat resistance
- (d) State the monomers used for preparation of Urea Formaldehyde.
- (e) Draw the structure of EVA.
- (f) Classify fillers.
- (g) Name the compounding equipment widely used with PVC.

- 2. Attempt any THREE :** **12**
- (a) Write preparation of polypropylene.
 - (b) State properties of ABS.
 - (c) State properties and applications of PEEK.
 - (d) Explain the construction and working of tumbler mixer.
- 3. Attempt any THREE :** **12**
- (a) Explain the preparation of PMMA.
 - (b) Explain the manufacturing of PVC by cracking process.
 - (c) State the advantages, properties and limitations of PPO.
 - (d) State the properties and applications of silicon.
- 4. Attempt any THREE :** **12**
- (a) Explain manufacturing of PS by bulk technique.
 - (b) State properties and applications of PTFE.
 - (c) Explain the manufacturing of polyacetal.
 - (d) State properties and applications of phenol formaldehyde.
 - (e) Compare internal lubricants with external lubricants along with example.
- 5. Attempt any TWO :** **12**
- (a) Compare PS with HIPS with respect to preparation, properties and applications.
 - (b) Suggest the relevant additives to prevent thermal degradation & UV degradation of plastic along with its mechanism and example.
 - (c)
 - (i) Justify the need of compounding of plastics.
 - (ii) Explain the working and applications of two-roll mill.

6. Attempt any TWO :**12**

- (a) Write preparation & properties of the plastic used for making packaged water bottles.
 - (b) Write preparation and properties of polymer used for refrigerator insulation.
 - (c) Identify the applications for which SAN is preferred over PS with reason and explain manufacturing of SAN.
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