



11819

22354

**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.*
  - (6) *Abbreviations used carry their usual meaning.*

**Marks**

1. Attempt **any five** of the following : **10**
- a) State the full form of HDPE, LDPE, PS and PVC.
  - b) Represent the structural formula of PS and PMMA.
  - c) Enlist any four applications of PS.
  - d) Define the terms thermosetting plastics and thermoplastics.
  - e) Represent the reaction involved in manufacturing of ethylene vinyl acetate.
  - f) State any four functions of additives.
  - g) Draw neat labelled figure of Tumbler mixer.
2. Attempt **any three** of the following : **12**
- a) State any four properties and four applications of HDPE.
  - b) Describe principle of manufacturing of polycarbonate with reaction involved in it.
  - c) Explain the principle of manufacturing of phenol formaldehyde with acid catalyzed reaction involved in it.
  - d) State any four properties and four applications of styrene acrylonitrile.
3. Attempt **any three** of the following : **12**
- a) Explain the principle of manufacturing of polyvinyl alcohol by hydrolysis process. State its any four properties.
  - b) State any four properties and four applications of Acrylonitrile Butadiene styrene.
  - c) State any four properties and four applications of urea formaldehyde.
  - d) Explain the principle of manufacturing of PPS. State its any four properties.

**P.T.O.**



4. Attempt **any three** of the following :

12

- a) State any four properties and four applications of polyethylene terephthalate.
- b) Explain the principles of manufacturing of PTFE. State its four properties.
- c) Classify the fillers and explain its role in compounding.
- d) Explain working of high speed mixer with neat figure.
- e) Compare HIPS with PS with respect to content and properties.

5. Attempt **any two** of the following :

12

- a) Suggest the material used for manufacturing of an explosive with its structure and state its any four properties and four applications.
- b) Explain the principle of manufacturing of polyurethane with its four properties and four applications.
- c) State the functions, examples and selection criteria for plasticizers during the compounding.

6. Attempt **any two** of the following :

12

- a) Suggest the material used for manufacturing of gears for home appliances with its structure and state its any four properties and four applications.
  - b) Suggest speciality plastic used in manufacturing of aerospace components with its structure and state its four properties and four applications.
  - c) Describe construction and working of Ribbon Blendor with neat figure.
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