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23242

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 of the following:** **10**
- a) Name any four monomer for acrylic resin.
 - b) State applications of epoxy resin.
 - c) Define polyamide resin.
 - d) Write any four applications of polyurethane resin.
 - e) Write any two properties of silicon resin.
 - f) Explain water-base epoxy resin.
 - g) List applications of silicon resin.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Write the properties and application of acrylic resin.
 - b) Explain determination of epoxy equivalent of an epoxy resins.
 - c) Differentiate reactive and non-reactive polyamide resin.
 - d) Classify polyurethane resins.
- 3. Attempt any THREE of the following:** **12**
- a) Describe preparation of an epoxy ester.
 - b) Write the application of polyamide resin with their requirements.
 - c) Sketch reactor for manufacturing of polyurethane resin.
 - d) Explain general structure of silicone resin.
- 4. Attempt any THREE of the following:** **12**
- a) Explain with reactions curing of functional acrylic with amino resins.
 - b) Explain Pure acrylic emulsion and styrenated emulsion.
 - c) Explain curing reaction of epoxy resin with polyamide resin.
 - d) Explain properties of polyamide resin.
 - e) Explain general properties of 2-K polyurethane coatings.
- 5. Attempt any TWO of the following:** **12**
- a) Write stepwise procedure for preparation of an acrylic resin by solution polymerization.
 - b) With stepwise reactions, describe method of preparation of epoxy resin.
 - c) Describe method of preparation of polyamide resin.
Write reactions involved.

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

- a) Explain mechanism of moisture cure polyurethane coatings with its applications and limitations.
 - b) Explain modification at silicon resin with phenolic resin and alkyd resin.
 - c) Explain with reactions, manufacturing process of silicone resin.
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