# 313354

**12425**

**03 Hours / 70 Marks** Seat No. | | | | | | | | |

*Instructions* – (1) All Questions are *Compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

(5) Abbreviations used are their usual meaning.

**Marks**

**1. Attempt any FIVE of the following :** **10**

a) State the full form of HDPE, LDPE, PS and PP.

b) State the full form of ABS and PTFE.

c) State the full form of PF, UF, MF and PU.

d) Define thermosetting polymer.

e) Enlist any four additives used in polymer processing.

f) Define additives.

g) Enlist any four compounding equipments.

**Marks**

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

a) State any four properties and four applications of LDPE.

b) State any four properties and four applications of acrylonitrile butadiene styrene (ABS).

c) State any four properties and four applications of phenol formaldehyde (PF).

d) Define plasticizers. State its two function and enlist any two plasticizers.

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

a) State any four properties and four applications of HDPE.

b) Define engineering polymers. Enlist any four engineering polymers.

c) State any four functions of heat stabilizers.

d) Describe construction and working of high speed mixer.

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

a) State any four properties and four applications of polypropylene.

b) State any four properties and four applications of nylon-6.

c) State any four properties and four applications of melamine formaldehyde (MF).

d) Describe construction and working of two roll mill.

e) State any four properties and four applications of polyvinyl chloride (PVC).

**Marks**

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

a) Explain manufacturing principle of polyacrylonitrile (PAN). State it's any four properties and four applications.

b) Describe manufacturing principle of polycarbonate. State it's any four properties and four applications.

c) Explain the principle of manufacturing of urea formaldehyde (UF) with reaction involved in it. States its two properties and two applications.

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

a) Explain manufacturing principle of cellulose acetate. State it's any four properties and four applications.

b) State any two functions for fillers, colorant and impact modifiers.

c) Describe construction and working of tumbler mixer with neat figure.

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