

313357

12425

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Illustrate your answers with neat sketches wherever necessary.
  - (3) Figures to the right indicate full marks.
  - (4) Assume suitable data, if necessary.
  - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Solve any FIVE :**

**10**

- (a) Define : (1) Rubber (2) Elastomer
- (b) State any four properties of Silicon Rubber.
- (c) Define Synthetic Rubber. Give example.
- (d) Define compounding of Rubber.
- (e) State function and example of filler.
- (f) State principle of rubber extrusion process.
- (g) State significance of Resilience Test.

**2. Solve any THREE :**

**12**

- (a) Explain in brief Latex Technology.
- (b) Give classification of Rubber with example.
- (c) Describe preparation of Styrene Butadiene Rubber.
- (d) State any four properties & applications of Neoprene Rubber.



- 3. Solve any THREE :** **12**
- (a) Elaborate – Latex Tapping Process.
  - (b) Differentiate between natural & synthetic rubber.
  - (c) State any four properties & applications of EPDM rubber.
  - (d) Explain manufacturing of Nitrile Butadiene Rubber.
- 4. Solve any THREE :** **12**
- (a) State the need and advantages of Thermoplastic Elastomer.
  - (b) State compound recipe for conveyor belt, state function of each additives.
  - (c) With neat sketch, explain working principle of compression moulding.
  - (d) State the need and effect of vulcanization on the rubber.
  - (e) Describe the test procedure for hardness test.
- 5. Solve any TWO :** **12**
- (a) Draw sketch of two roll mill and explain construction & working of two roll mill.
  - (b) Describe Rubber Injection Molding Process and name any four products produced from this process.
  - (c) Elaborate the following terminologies with respect to calendering process :
    - (1) Skimming      (2) Fractioning      (3) Topping
- 6. Solve any TWO :** **12**
- (a) With neat sketch describe construction and working of Banbury mixer.
  - (b) Enlist the type of vulcanization. Explain mechanism of Sulphur Vulcanization.
  - (c) Explain constructional features & working of ram extrusion for rubber with neat sketch.
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