

17653

11819

3 Hours / 100 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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.
 - (7) Abbreviations used convey usual meaning.

Marks

1. Attempt any FIVE of the following :

20

- (a) Write any four applications of natural rubber.
- (b) Write any four properties and applications of polyacrylic rubber.
- (c) Define accelerator. Why is it used ?
- (d) Explain with a neat labelled diagram working of cold feed extruder.
- (e) Describe a method to prepare a glove.
- (f) Enlist any four components of tyre and state their role.
- (g) Explain the construction of tyre.

2. Attempt any TWO of the following :**16**

- (a) (i) Enlist any four properties of fluorocarbon rubber.
- (ii) Enlist any four applications of fluorocarbon rubber.
- (b) (i) Write the full form of NBR.
- (ii) Write important properties and applications of NBR.
- (c) Describe :
 - (i) Hot feed extrusion of rubber
 - (ii) Ram extrusion of rubber

3. Attempt any TWO of the following :**16**

- (a) Describe preparation of
 - (i) Polybutadiene rubber
 - (ii) Fluorocarbon rubber
- (b) (i) What is synthetic rubber ? Name any four synthetic rubber. Write applications of reclaimed rubber.
- (ii) Name a thermoplastic rubber. State its characteristics.
- (c) (i) Describe the latex compounding of rubber product.
- (ii) Explain manufacturing of carpet backing seals. Enlist their uses.

4. Attempt any TWO of the following :**16**

- (a) Enlist four properties and four applications of styrene-butadiene rubber.
- (b) Define vulcanization. Explain sulphur and non-sulphur vulcanizations of rubber.
- (c) (i) Write the special grades of natural rubber.
- (ii) State characteristics of special grades of natural rubber.

5. Attempt any TWO of the following :**16**

- (a) Describe method to check solubility and tack of elastomers.
- (b)
 - (i) Describe tyre building process.
 - (ii) Describe construction of standard diagonal tyres.
- (c) Explain :
 - (i) Principle of Mastication
 - (ii) Classification of accelerators

6. Attempt any FOUR of the following :**16**

- (a) Name any two thermosetting elastomers and write any four characteristics of thermosetting elastomers.
 - (b) State four important properties of silicone rubber.
 - (c) Describe calendering of rubber.
 - (d) Outline a manufacturing process of O-ring.
 - (e) Enlist the materials used in construction of a tyre.
 - (f) Write the full form of EPDM. State its any four important properties.
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