

22455

22232

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) 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) Enlist any two sources of natural rubber.
- (b) Identify any two monomers used in manufacturing EPDM.
- (c) Enlist name of any two antioxidants.
- (d) State the concept of vulcanization.
- (e) Write name of any two vulcanizing agents.
- (f) State the significance of resilience test.
- (g) State the utility of hot feed extruder.

2. Attempt any THREE of the following :

12

- (a) Explain tapping and collection of latex in brief.
- (b) Describe in brief processing of latex.



- (c) Elaborate the molecular requirements for rubber.
- (d) Elaborate the applications of Neoprene rubber.
- 3. Attempt any THREE of the following : 12**
- (a) Write the characteristics of natural and synthetic rubber.
- (b) State need and advantages of TPE.
- (c) Explain manufacturing of silicon rubber.
- (d) Describe in brief manufacturing of emulsion SBR.
- 4. Attempt any THREE of the following : 12**
- (a) Explain in brief need of mastication of rubber.
- (b) Justify the need and state function of fillers and accelerator.
- (c) Explain compounding recipe and give the compounding recipe of anyone product.
- (d) Explain in brief peroxide vulcanization and Sulphur vulcanization.
- (e) Describe in brief Rebound elasticity test.
- 5. Attempt any TWO of the following : 12**
- (a) Draw a neat sketch of Banbury mixer and describe its working.
- (b) Describe in brief autoclave and microwave vulcanization.
- (c) With suitable sketch, explain 3 roll calendaring process.
- 6. Attempt any TWO of the following : 12**
- (a) Explain in brief manufacturing of Butyl rubber.
- (b) Explain in brief compression moulding process for manufacturing rubber lid of a container.
- (c) Describe rheometer test procedure.
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