

{This question paper contains 3 printed pages.}

Your Roll No.

3173

J

M.E. Polymer Technology

Paper—CH.553

(Polymer Technology—II)

Time : 3 Hours

Maximum Marks : 100

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt any five questions.

All questions carry equal marks.

1. (a) Discuss the role of ingredients in polymer compounding. 4
- (b) Explain the importance of any *four* of the following additives in plastic compounding : 16
 - (i) Antioxidants.
 - (ii) Plasticizers.
 - (iii) Impact modifiers.
 - (iv) Colorants.
 - (v) Blowing agents.
 - (vi) Nucleating agents.
2. (a) Give detail of sulphur and non-sulphur vulcanization of rubber. 8

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- (b) Discuss about *any three* of the following ingredients of rubber compounding : 12
- (i) Accelerators
 - (ii) Peptisers
 - (iii) Stiffners
 - (iv) Flame Retardants
 - (v) Fillers
 - (vi) Softeners
3. (a) What do you understand with practical mixing variables ? 4
- (b) With the help of neat diagram write about the working of a twin screw extruder. 8
- (c) Describe the design and working of cold feed extruders. Mention their merits over hot feed extruders. 8
4. (a) Write about two roll mills and mention their applications. 8
- (b) What do you mean with the calendering technique? Give detail of various calender configurations and operations. 12
5. With the help of neat sketch, explain the following w.r.t. Injection Moulding : 20
- (a) Cycle of operations
 - (b) Injection Pressure

- (c) Mould Temperature
- (d) Shear and Orientation.
6. (a) Describe the compression moulding process and report its advantages over transfer moulding process. 12
- (b) Illustrate thermoforming process with the help of a suitable item obtained out of it. 8
7. (a) Write about the slush moulding and casting operations. Support your answer with suitable examples. 8
- (b) Give brief of any *three* of the following : 12
- (i) Latex foam rubber.
- (ii) Dipping and coating.
- (iii) Decoration of Polymers.
- (iv) PVC Lattices.
8. Write short notes on any *four* of the following : 4 × 5 = 20
- (a) Rotational Moulding.
- (b) Pneumatic Tyres.
- (c) Laminates.
- (d) Foam Composites.
- (e) Tackyfying Agents.
- (f) Packaging Films.
- (g) Compound Development.
- (h) Pipes.