

M.Sc Sem-3 Examination

502

Polymer Science

November-2024

Time : 2-30 Hours]

[Max. Marks : 70

QUESTION – 1 Write the following.

- (i) Give complete Classification of Polymer Additives? 7MARKS
- (ii) What do you understand by Lubricants for Polymer? Classified it. 7 MARKS

OR

- (i) Explain vulcanization process using sulphur & peroxide as vulcanizing agents of rubber. 7 MARKS
- (ii) What is Reclaimed Rubber? Why there are used in Rubber Compounding? 7 MARKS

QUESTION – 2 Write the following.

- (i) Coupling agent (ii) Filler & reinforcements 7 MARKS
- (ii) Describe the function of Plasticizers with the help of its mechanism. 7 MARKS

OR

- (i) Describe the mechanism used for cross-mixing in Tumbler Blenders 7 MARKS
- (ii) Clarify construction features and working of ribbon Blenders. 7 MARKS

- QUESTION – 3** (i) Describe principles and operating details of the Two Roll Mill equipment. 7 MARKS
- (ii) Define Compounding& explain objectives of compounding. 7 MARKS

OR

- (i) Explain the Divided section of Screw of Injection Molding machine. 7 MARKS
- (ii) Clarify constructional features and working of Ribbon Blenders. 7 MARKS

- QUESTION – 4** (i) What are advantages of Plastics Over Metals? 7 MARKS
- (ii) Explain constructional features and working of Banbury Mixer? 7 MARKS

OR

- (i) What is Impact modifier ? Explain with example. 7 MARKS
- (ii) What is importance of compounding? Which mechanism use for compounding of polymer . 7 MARKS

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QUESTION – 5 Attempt any seven out of twelve.

14 MARKS

- (i) Conventional silicone oils have been used in polymer processing as lubricant” justify.
- (ii) Enlist any two organic & Inorganic colorants.
- (iii) What is the effect of natural filler on thermal properties of polymer composites?
- (iv) Define elastomer. Give examples of synthetic Elastomer?
- (v) Halogen containing polymers of ethane but there is marked difference in their properties. Explain.
- (vi) What are antioxidants? Give two examples?
- (vii) Give the suitable example of UV stabilizer.
- (viii) What do you mean by master batch?
- (ix) Define Cure Time.
- (x) Explain LOI for Polymer.
- (xi) For what application High-speed mixer is used?
- (xii) Enlist the auxiliary machine used in plastic Industries?

END