

M.Sc Sem-3 Examination

504

Polymer Science

November-2024

Time : 2-30 Hours]

[Max. Marks : 70]

QUESTION – 1 Write the following

(i) Discuss the process of Reclamation of Reclaimed rubber. And write down the short note on RSS. **7 MARKS**

(ii) Describe the processing of Latex and grading of Natural Rubber. **7 MARKS**

OR

(i) What are the differences in between Vulcanization and Curing, Explain the application of Silicone Rubber. **7 MARKS**

(ii) Draw a structure of Styrene Butadiene Rubber and write down manufacturing of SBR. **7 MARKS**

QUESTION – 2 Write the following

(i) Describe the Structure and Morphology of Block Copolymer. **7 MARKS**

(ii) Explain the manufacturing of Polyurethane thermoplastic elastomer. **7 MARKS**

OR

(i) Explain the manufacturing of Polyamide thermoplastic elastomer. **7 MARKS**

(ii) Write a short note on different type of processing method for TPE. **7 MARKS**

QUESTION – 3 Write the following

(i) Give brief note on abrasion resistance test of Rubber. **7 MARKS**

(ii) Define difunctional compound. Explain the crosslinking of Butyl rubber using Phenolic Resin. **7 MARKS**

OR

(i) Write short note on peroxide vulcanization system. **7 MARKS**

(ii) Explain the different type of testing for Rubber Vulcanization. **7 MARKS**

QUESTION – 4 Write the following

(i) Discuss the Mixing process with neat sketch the two Roll Mill. **7 MARKS**

(ii) Describe the structural component of a BIAS TYRE. **7 MARKS**

OR

(i) What is an Extrusion? Describe the main component in Rubber Extrusion. **7 MARKS**

(ii) Write down the Mixing Procedure of (a) Conventional method (b) The sandwich method **7 MARKS**

QUESTION – 5 Attempt any Seven out of Twelve.

14 MARKS

- I. Ozonide form from ozone react with polyisoprene. (True/False).
- II. Fluorocarbon is a copolymer of Pentafluoro propene with
- III. Nitrile rubber is manufactured by - MCQ
 - a. Suspension polymerization (b) Solution polymerization (c) Emulsion polymerization
- IV. SBR is a –
 - a. Plastic (b) Polymer (c) Rubber (d) Elastomer.
- V. Rhombic Sulphur is a soluble in Carbon disulphide. (True/False)
- VI.is the most important source of natural rubber.
- VII. Hexamethylene tetramine accelerator is use for fast curing accelerator for Reclaim rubber. (True/False).
- VIII. Roll type calenders are used for sheeting and fractioning.
- IX. Peptizer is used as an additive for purpose.
- X. which type of rubber is used as inner liner of tyre.
 - a. Butyl rubber (b) Natural rubber (c) EPDM rubber.
- XI. Write down the properties of Polyurethane.
- XII. Write short note on Calendering in rubber manufacturing.