

6. (a) Explain how the following properties of natural rubber are influenced by non-rubber substances :
(any two)

- (i) Dipping Process
- (ii) Latex Thread
- (iii) Filler effect

- (b) Explain how latex ballons are generated.

(5×2,5=15)

7. (a) Write down the formulation for later of by casting method.

- (b) Draw a flow chart of later foam preparation and explain the importance of each step.

- (c) What are the advantages and disadvantages of emulsion polymers ?

(5×3=15)

(1000)

Your Roll No.....

Sr. No. of Question Paper : 1049 D

Unique Paper Code : 6092011102

Name of the Paper : Raw Material of Polymers
(2022-23) (UGCF)

Name of the Course : B.Sc. (Hons.) Polymer
Science

Semester : I

Duration : 3 Hours Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt six questions in all.
3. Question No. 1 compulsory to attempt.
4. Draw neat and labelled diagram wherever necessary.
5. All questions carry 15 marks.

1. (a) "Petroleum components are manufactured from chemicals derived from petroleum raw material." Describe two chemical processes involved in the petroleum manufacturing.

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- (b) Explain the Chlorohydrin process for synthesis of ethylene oxide.
 - (c) State the differences of Processing of latex and solid rubber?
 - (d) Classify accelerators. Explain their course of action with the help of rheo curve.
 - (e) Which technique is used to make elastics? Explain the process. (3×5=15)
2. (a) Compare fixed bed and moving bed catalytic cracking with suitable diagrams.
- (b) Discuss the following terms in a crude oil refinery with suitable schematic representation: Hydrotreating, Hydrocracking, Caking and Coking.
- (c) What are the advantages and disadvantages of natural gas for our planet? (5×3=15)
3. Describe manufacturing process with reactions and flow sheet for the following Monomers (any 3)
- (a) Terphthalic Acid
 - (b) Phenol
 - (c) Methyl Methacrylate

- (d) Ethylene Glycol
 - (e) Vinyl Acetate (5×3=15)
4. (a) How are accelerators classified? Discuss with examples.
- (b) What are stabilisers? How are they classified?
- (c) Give one example for each of the following types with a short note :
- (i) Staining
 - (ii) Semi-Staining
 - (iii) Non-Staining
- (c) Distinguish between sulfurless vulcanization and low sulfur vulcanization? (5×3=15)
5. (a) Write notes on :
- (i) Tapping process
 - (ii) Ribbed Smoke Sheets
 - (iii) Pale Crepe
 - (iv) SR Processing Methods
- (b) Explain the significance of scorch time and cure time in rubber compounding and vulcanization. (10,5=15)
- P.T.O.