

1776

4

[This question paper contains 4 printed pages.]

5. (3×5=15)

Your Roll No.....

(a) What is the speciality of fluoro-rubber? Depending on its unique properties name three applications of the rubber.

(b) How butyl rubber is vulcanised? What are its unique properties?

(c) Explain optimum cure time, marching and reversion. What are their significance?

Sr. No. of Question Paper : 1776

L

Unique Paper Code : 6092013603

Name of the Paper : Rubber Technology

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

Semester : V/(DSC)

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **four** questions in all.
3. Draw neat and labelled diagram wherever necessary.

1776

2

1. (5×3=15)

- (a) Differentiate an elastomer and a thermoplastic.
- (b) What are the basic features of Thermoplastic Elastomers?
- (c) What is hysteresis? How heat build up and resilience are linked with hysteresis?
- (d) Explain a typical rheo-curve of a compounded rubber.
- (e) How sulphur vulcanised rubber behaves differently than a peroxide vulcanised rubber?

2. (3×5=15)

- (a) What do you mean by scorch safety time? Explain using diagram. What is its implication in industrial production of rubber products?
- (b) Discuss the vulcanization processes used for neoprene rubber and butyl rubber in detail.
- (c) What is strain induced crystallisation. Which rubber shows this behaviour and why?

1776

3

3. (3×5=15)

- (a) Discuss the working of internal mixers and calendar.
- (b) How silicone is processed in a continuous reaction injection molding process?
- (c) Discuss any two non-sulphur vulcanization reactions?

4. (3×5)

- (a) What is conventional, semi-efficient and efficient vulcanization systems?
- (b) Compare properties of hot SBR, cold SBR and e-SBR.
- (c) Why silicone rubber shows very low temperature flexibility as well as high temperature retention of properties? How the low temperature flexibility may further be enhanced?

P.T.O.