

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V • EXAMINATION – WINTER 2013

Subject Code: 152602

Date: 29-11-2013

Subject Name: Latex Technology

Time: 10.30 am - 01.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q. 1 Answer the following. (14)

- (i) Write the chemical composition of fresh NR latex.
- (ii) What do you mean by heat sensitized dipping?
- (iii) Write the characteristics of non porous moulds used for latex casting process.
- (iv) Give comparison between Cut thread and Extruded thread.
- (v) Show the schematic diagram for manufacturing of Rubberized fabric by Fabric saturation process.
- (vi) Explain the working principle of planetary mixer used for foam rubber products.
- (vii) Write any two advantages of latex over solid rubber as raw material.

Q. 2 (a) Draw the schematic diagram of dipping tank and explain about the dipping system in detail. (07)

Q. 2 (b) Explain the latex thread manufacturing process in detail. (07)

OR

(b) List the processing parameters affecting the latex extrusion process and explain their importance during process. (07)

Q. 3 (a) Answer the following.

- (i) Short note on “Bound Crumb Carpet Underlay”. (05)
- (ii) Give comparison between beater addition and paper saturation process. (02)
- (b) Explain the Talaly process for foam rubber production in detail. (07)

OR

Q. 3 (a) Answer the following.

- (i) List the advantages of incorporation of latex into carpet. (05)
- (ii) Draw the schematic diagram for paper coating process by air-knife process. (02)
- (b) Explain the continuous manufacturing of latex foam rubber by the Dunlop process. (07)

Q. 4 (a) Discuss the latex casting method by using porous mould. (05)

(b) How the polymer is selected when two different polarity substrate are to be bonded for latex based adhesive formulation? (04)

(c) Explain about the theory and process of centrifugation as latex concentration method. (05)

OR

Q. 4 (a) Discuss the latex casting method by using non- porous mould. (05)

(b) Explain the effect of fillers in latex based adhesive. (04)

(c) Explain the concentration of NR latex by Evaporation method. (05)

- Q. 5** **(a)** Write about the chemical composition of synthetic lattices relatively to NR latex. **(05)**
 (b) Short note on” Solution Emulsification Technique”. **(04)**
 (c) Explain the sulfur prevulcanization process for NR latex. **(05)**

OR

- Q. 5** **(a)** Explain in detail about Wet gel strength & Mud cracking. **(05)**
 (b) What do you mean by artificial lattices? Write its advantages and disadvantages relative to synthetic lattices. **(04)**
 (c) List the methods for assessment of degree of vulcanization of prevulcanized NR latex and write about any one in brief. **(05)**
