

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2023

Subject Code:3132605

Date:25-01-2024

Subject Name:Latex Technology

Time:10:30 AM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

Q.1 (a) “Hevea Brasiliensis tree is the most widely used tree for Natural latex yield world wide”. Give reason. **(03)**

(b) Draw the schematic diagram showing mature trunk of Hevea Brasiliensis Tree with its labeled components. **(04)**

(c) Describe in detail about Vegetative propagation method for NR latex cultivation. **(07)**

Q.2 (a) Write advantages and disadvantages of Ammonia as a latex preservative. **(03)**

(b) Mention basic characteristics of an ideal preservative for NR latex. **(04)**

(c) Name various secondary preservatives for NR latex. Write significance of any three in detail. **(07)**

OR

(c) Describe Ammoniation process in detail with schematic diagram. **(07)**

Q.3 (a) Write in brief about formation of Volatile fatty acid anions. **(03)**

(b) Give schematic illustration of equipment used for concentration of NR latex by Evaporation. **(04)**

(c) Mention the principle of Electrodecantation. Explain the working mechanism of apparatus with diagram. **(07)**

OR

Q.3 (a) Give basic chemical composition of Natural Rubber latex. **(03)**

(b) Explain about cream and Skim formation during Creaming process of NR latex. **(04)**

(c) Draw the De Laval Centrifuge bowl and explain its working mechanism for concentration of latex. **(07)**

Q.4 (a) Write about function and types of surface active substances for latex compounding. **(03)**

(b) Write the general considerations for preparation of Dispersions and solutions. **(04)**

(c) Describe in detail about working of Colloid Mills. Write about any one in detail showing schematic diagram. **(07)**

OR

Q.4 (a) Give a formulation for preparation of 50% Zinc Oxide dispersion. **(03)**

(b) List basic types of Accelerators used for latex compounding. Explain about any one. **(04)**

(c) Write about working of ball mill. Write about important variables affecting efficiency of ball mill. **(07)**

Q.5 (a) Write about basic types of Latex allergies. **(03)**

(b) Write in brief about particle size of Latex and its influence on properties. **(04)**

(c) Explain in detail about True solutions and Colloidal solutions and give difference between them. **(07)**

OR

- Q.5** **(a)** What is Latex fruit Syndrome? **(03)**
 (b) What is Mechanical Stability Time? Write for NR latex. **(04)**
 (c) What is Gelation? Mention basic methods of gelation and explain any one in detail. **(07)**
