

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– III (New) EXAMINATION – WINTER 2019****Subject Code: 3132605****Date: 3/12/2019****Subject Name: Latex Technology****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

| | | Marks |
|------------|--|--------------|
| Q.1 | (a) Relate the influence of time of day of tapping on yield of latex. | 03 |
| | (b) List the climate requirements and suitable soil conditions for the growth of Hevea Brasiliensis tree. | 04 |
| | (c) Explain the seed propagation method for Hevea tree and evaluate with the help of schematic diagram. | 07 |
| Q.2 | (a) Apply some alternative ways for prevention of NR latex allergy. | 03 |
| | (b) Classify the basic types of latex allergies. | 04 |
| | (c) Identify the effect of Ammonia as a good bactericide for NR latex with graphical representation. | 07 |
| OR | | |
| | (c) Construct the long-term Ammoniation process diagram and explain it. | 07 |
| Q.3 | (a) List the basic types of colloid mills. | 03 |
| | (b) Analyze the influence of size of balls on function of ball mill. | 04 |
| | (c) Elaborate the Centrifugation technique for concentration of NR latex and construct the suitable diagram. | 07 |
| OR | | |
| Q.3 | (a) Examine the degree of dispersion for an aqueous dispersion. | 03 |
| | (b) Compare the advantages of Attrition mill over ball mill. | 04 |
| | (c) Discuss the Electrodecantation method for NR latex concentration with schematic illustration of equipment. | 07 |
| Q.4 | (a) List any three physical properties of colloidal solution and write about the same. | 03 |
| | (b) Classify the types of colloids based on nature of dispersed phase. | 04 |
| | (c) Explain in detail about Zeta Potential and write the factors affecting it. | 07 |
| OR | | |
| Q.4 | (a) Define the terms: (i) Colloids (ii) Dispersed phase (iii) Dispersion medium | 03 |
| | (b) Compare Lyophilic sol and Lyophobic sol. | 04 |
| | (c) Explain in detail about Gelation by salts. | 07 |
| Q.5 | (a) List the different types of surfactants based on their chemical nature. | 03 |
| | (b) Categorize different class of accelerators used in latex compounding. Write about any one in detail. | 04 |
| | (c) Discuss in detail about 'Antioxidants' used in latex compounding. | 07 |
| OR | | |
| Q.5 | (a) What is the role of thickening agent in latex compounding? Write its examples. | 03 |
| | (b) Classify surfactants based on their functions. Write about any one in detail. | 04 |
| | (c) Discuss in detail about 'Kaolinite Clay' and 'Calcium Carbonate' as fillers used in latex compounding. | 07 |
