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***B.Tech. Degree III Semester Examination in
Polymer Science and Engineering November 2019***

PE 1303 NATURAL RUBBER PRODUCTION AND TECHNOLOGY

Time : 3 Hours

Maximum Marks : 50

PART A

(Answer *ALL* questions)

(10 × 2 = 20)

- I. (a) What are the components of field latex?
 (b) Write down the agro-climatic conditions suitable for NR cultivation.
 (c) Explain why preservation of NR latex is done.
 (d) Describe LATZ system in Latex preservation.
 (e) Calculate the volume of water required to dilute 5 litres of field latex of DRC 40 to a DRC of 10?
 (f) Expand the abbreviation EBC. How is it produced?
 (g) What are the advantages of smoke drying over air drying?
 (h) Name any four common defects in the ribbed smoked sheet (RSS).
 (i) Name any two size reduction machines used for TSR production.
 (j) What is CV rubber? Why and how it is produced?

PART B

(4 × 7½ = 30)

- II. Schematically narrate the bio-synthetic pathway of production of natural rubber. (7½)
- OR**
- III. (a) Briefly describe the different methods of NR latex tapping. (4)
 (b) Comment on the present status of rubber plantation industry in the world. (3½)
- IV. Describe the latex concentration methods of Centrifuging and Creaming. Brief their merits and demerits. (7½)
- OR**
- V. (a) Briefly explain the processing of ribbed smoked sheet (RSS). (6)
 (b) What do you mean by VFA content in NR latex? (1½)
- VI. (a) Name the various marketable forms of NR. (2)
 (b) Explain the production of skim rubber. Mention two specific applications. (5½)
- OR**
- VII. Briefly explain the production of various creep rubber grades? How are they graded? (7½)
- VIII. (a) Explain the production of technically specified rubber from field latex? (5)
 (b) Write down the technical specifications of ISNR 10. (2½)
- OR**
- IX. Write notes on the following: (7½)
 (i) Oil extended rubber (ii) Superior processing rubber (iii) Latex carbon black master-batch