

Total no. of Pages: 2

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**SIXTH SEMESTER
MID SEMESTER EXAMINATION**

**B.Tech.
March-2019**

Subject: Rubber Technology (PT302)

Time: 1.5 Hours

Max. Marks: 30

Note: Answer all questions. Assume suitable missing data, if any.

1. Choose the correct answer from the given alternatives [0.5 × 6 = 3]
- i) T_g of Raw Natural Rubber is:
a) - 60°C
b) - 70°C
c) - 55° C
d) - 0° C
- ii) Gutta Percha has the structure
a) cis 1,4 Polyisoprene
b) cis 1,2 Polyisoprene
c) trans 1,4 Polyisoprene
d) none of the above
- iii) One of the major drawback of Polybutadiene Rubber is:
a) High Rebound Resilience
b) Resistance to Polar solvents
c) Poor Processability
d) None of the above
- iv) Dry rubber content of centrifuged natural latex is approximately
a) 60%
b) 50%
c) 70%
d) 45%
- v) For stabilization of latex useful material is
a) NaCl
b) H_2SO_4
c) NH_3
d) $CaCO_3$
- vi) On incorporation of carbon black into rubber
a) Hardness increases
b) Hardness decreases
c) Hardness does not change
d) Becomes brittle

- 11 —
2. Discuss any two factors on which T_g of a polymer depends? T_g of Polyethylene is well below room temperature like rubber but still it is plastics. Why? [3]
 3. List the name of any two type of trees from which Natural latex can be obtained? Why Tapping is carried out at early morning? Justify. [3]
 4. Define the term “resilience” and explain the test used to measure rebound resilience. [3]
 5. Discuss the effect of frequency of tapping and age of tree on MW and MWD of natural rubber. [3]
 6. Describe the conditions that are necessary for a material to behave like a rubber. [3]
 7. What kind of synthetic rubbers are commonly known as thiokols? Discuss the synthesis, properties and applications of thiokol rubber. [3]
 8. Differentiate between RSS and ADS sheets. What are the advantages of traditional smoked sheets over ADS sheets? [3]
 9. Discuss in detail about effect of structure on chemical reactivity of rubber. [3]
 10. Discuss the major defects commonly observed in RSS and ADS sheets. How can they be overcome. [3]