Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– III (NEW) EXAMINATION – SUMMER 2015

Subject code: 2132602 **Date:02/06/2015**
Subject Name: Rubber Technology
Time:02.30pm-05.00pm **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 climate conditions required for the growth of Hevea Brasiliensis tree.
(ii) Write the importance of Lignin as a natural polymer.
(iii) Give the reaction mechanism for synthesis of Butadiene monomer.
(iv) List the basic types of Polymer degradation.
(v) Write the advantages of Orientation on properties of polymer.
(vi) Explain the term:"Polymer Sorbent".
(vii) What do you mean by Polymer crystallinity?

Q. 2 (a) List the techniques used for Propagation of Hevea Brasiliensis tree and explain any one with schematic diagram. **(07)**

Q. 2 (b) List the factors which affect on Crystallinity of Polymers. Explain about any two in detail. **(07)**

OR

Q. 2 (b) Write in detail about Thermal Transitions in Polymers. **(07)**

Q. 3 (a) Short note on Mechanical Degradation of Polymers. **(07)**

(b) Give the reaction mechanisms involved in synthesis of Phenolic resins and explain it in detail. **(07)**

OR

Q. 3 (a) Discuss in detail about Thermal Degradation of Polymers. **(07)**

(b) Write about the chemistry, properties and applications of Amino resins. **(07)**

Q. 4 (a) "Carbon is the most important element of Organic and Polymer chemistry." Justify the statement. **(07)**

(b) Write the importance of following Natural polymers: **(07)**
(i) Wool (ii) Silk (iii) Collagen

OR

Q. 4 (a) Discuss the importance of any two Halogen elements in chemical composition of Polymers. **(07)**

	(b)	Explain the basic chemistry of Starch and write its importance as a natural polymer.	**(07)**
Q. 5	**(a)**	Give the reaction mechanism for Ammoxidation process and explain it in detail.	**(07)**
	(b)	Write about "Warm Stretching" method for Orientation of Polymers.	**(04)**
	(c)	What do you mean by Porosity? List the parameters for estimation of Porosity of a Sorbent.	**(03)**

OR

Q. 5	**(a)**	List the name of methods for production of Styrene monomer and explain any one in detail.	**(07)**
	(b)	Explain the procedure of "Wet stretching" for Orientation of polymers.	**(04)**
	(c)	How the porous structure of Polymer can be produced? Explain by any one method in brief.	**(03)**

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