Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2152807 **Date:11/05/2016**

Subject Name:Processing & Applications of Non conventional Fibres

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.**

Q.1 (a) Name at least two fibres in each class: (1) Leaf fibres (2) Bast fibres (3) Synthetic polyamide fibres (4) Natural protein fibres (5) Inorganic fibres (6) Natural polymer fibres (7) Aramid fibres. 07

(b) What are Nylon 11 and Nylon 6T? Give their preparation and properties. 07

Q.2 (a) Describe synthesis, properties and uses of casein fibers. 07

(b) Discuss about recent developments in textile fibres took place in last five years. 07

OR

(b) Vinyl acetate is used in the production of which vinyl based fiber? Describe its synthesis and process of insolubilisation. 07

Q.3 (a) What is the raw material for obtaining Tencell/ Lyocell? Describe its synthesis and properties. Why is it considered an eco-friendly fiber from cradle to grave? 07

(b) Discuss the chemistry, properties and uses of Aluminum silicate fibres. 07

OR

Q.3 (a) Discuss the properties and uses of Glass Fibers and Soya bean fibers. 07

(b) Write the structure of monomer and polymer of polystyrene fiber. Explain its production process and properties. 07

Q.4 (a) Which of the following is a bast fiber? Describe how fibres are obtained from it; write its properties and uses. (a) Sisal (b) Abaca (c) Kenaf. 07

(b) What are carbon fibres? Describe manufacture and properties of carbon fibres. 07

OR

Q.4 (a) Match 'A' and 'B': 07

A	B
(1)Fibre used as insulation material	Carbon
(2)Water soluble fiber	Kevlar, Nomex
(3)Alkali soluble fiber	Nylon 6T
(4)Aramid fiber	Glass
(5)Combines properties of Nylon and polyester	Polyvinyl Alcohol
(6)Inert and heat resistant	Kenaf
(7)Used in making ropes, twines and coarse fabrics	Alginate

(b) From which part of the sisal plant are fibres obtained? Describe extraction of sisal fibres and its properties. 07

Q.5 (a) What is the source of Alginate fibres? How are they produced? Give the uses of Alginate fibres based on its solubility properties. 07

(b) This fiber is made from Type E and Type C borosilicate. It is used as insulation material. Give properties and applications of this fiber. 07

OR

Q.5	(a)	Brief about the chemistry of Aramid fibres? Give production, properties and uses of Kevlar.	07
	(b)	Which type of fiber is collagen? Describe the synthesis and uses of collagen.	07

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