THIRD SEMESTER
TEXTILE TECHNOLOGY
SCHEME JULY 2008
TEXTILE FIBRE (304)

Time : Three Hours ***Maximum Marks : 100***

Note : i) Attempt total six questions. Question No.1 (objective type) is compulsory. From the remaining questions attempt any five.
ii) Draw sketch wherever necessary.

1. Choose the correct answer (2 each)
   i) Which polymer is suitable for manufacturing polypropylene filament?
      a) Isotactic mainly
      b) Atactic mainly
      c) Syndiotactic mainly
      d) None of the above
   ii) Calcium bisulphite is used in viscose manufacturing for
      a) Increasing strength
      b) Purification purpose
      c) Clustering effect
      d) Make the fibre pliable and soft

iii) In cotton fibre wide lumen is found in

a) Mature fibre b) Immature fibre

c) Dead fibre d) Normal fibre

iv) Wool fibre at boil dissolves in

a) 0.5 % KOH b) 100 % KOH

c) 5 % NaOH d) 0.5 % NaOH

v) Moisture regain of silk fibre is

a) 4 % b) 11 %

c) 8.5 % d) 18 %

2. What are raw materials used in the manufacture of Nylon 6 and Nylon 6,6 fibre? Explain the process of manufacturing of above mentioned any Nylon fibre starting from basic raw material with the help of flow sheet diagram. 18

3. What do you understand by the term "Texturising"? Name various methods of texturising process. Explain in detail clearly illustrating with sketch any one method of texturising. 18

4. a) What is 'Sericulture'? Explain in detail. Also explain the 'Reeling of silk'. 12

b) Give the flow sheet of spinning process to convert raw cotton into combed and carded yarn. 6

5. a) What do you understand by the terms 'Degree of Polymerisation', 'Crystalline', 'Amorphous' and 'Orientation' in a fibre. How these factors determine the strength and durability of fibre? 10

b) What are the essential and desirable properties of a Textile fibre? Explain. 8

6. a) What is 'Polynosic fibre'? Describe the method of production of polynosic fibre with the help of a flow sheet diagram. Also mention how it differs from viscose in manufacturing process and properties? 12

b) Give classification of synthetic polymers in a tabulated form. 6

7. a) Draw and explain cross-sectional and Longitudinal diagram of cotton, wool, silk, viscose and acrylic fibres. 10

b) What are the various tests used for fibre identification? Explain in brief different tests for fibre identification of natural and man made fibres. 8

8. Answer any three of the following : 6 each

a) Write short notes on raw material and structure of polypropylene fibres.

b) Write in brief the principles of 'Wet', 'Dry' and Melt spinning with examples of each.

c) Write the difference between 'Acrylic' and 'Mod Acrylic' fibres. Name the raw materials for Acrylic fibres. How this raw material is manufactured.

d) Classify wool by fleece.

e) Write the moisture regain percentage of all textile fibres in your syllabus in ascending order.