

**NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF TEXTILE TECHNOLOGY**

**END OF SECOND SEMESTER EXAMINATIONS - AUGUST 2009**

**TXT 1203 - TEXTILE AND FIBROUS ASSEMBLIES**

**TIME: 3 HOURS**

**INSTRUCTIONS**

Answer **Question 1** and **ANY OTHER FOUR** questions. Each question carries **20 marks**.

**QUESTION 1**

- (a) Define what a fibre is and list the various fibre classes and subclasses. (4)
- (b) Explain or define the terms: staple fibre, filament fibre, denier, tenacity, and moisture regain. (5)
- (c) Name two types of worms that produce silk and explain their differences. (4)
- (d) Wool's moisture absorption is one of the most important characteristics. Explain. (3)
- (e) Define aramid fibres and give two examples of such fibres. (4)

**QUESTION 2**

Explain what you understand by the term microfibre. Give a detailed discussion of the properties and uses of microfibres. (20)

**QUESTION 3**

It is important to understand the properties of fibres since their processibility and end use is depended on the inherent fibre characteristics. Give a detailed explanation in support of this statement. (20)

**QUESTION 4**

With the aid of equations, explain the difference in the preparation of nylon-6, 6 and nylon fibres from raw materials. What are the end uses of the two fibres? (20)

**QUESTION 5**

(a) Write down the equations for the production of polymers from which polyester fibre is produced. (15)

(b) What are the end uses of fibres from flax and ramie? (5)

**QUESTION 6**

In the production of synthetic fibres there are various extrusion methods. With the aid of clearly labeled diagrams, discuss two such methods. For each method state the fibre that can be produced this way. (20)

**END OF QUESTION PAPER**