

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF TEXTILE TECHNOLOGY

END OF SECOND SEMESTER EXAMINATIONS - MAY 2011

TXT – 2220 TEXTILE QUALITY CONTROL I

TIME: 3 HOURS

INSTRUCTIONS

1. Answer **Question 1** and **ANY OTHER THREE** questions. Each question carries **25 marks**.
2. The first fifteen minutes should be spent reading the question paper and making notes.
3. Do not open your answer sheet until told to do so.
4. Marks will be awarded for skill in appreciating the scope of questions, clarity of argument and conciseness of presentation as well as for the knowledge displayed by the candidate.

QUESTION 1

- (a). The thermal transmittance of a fabric is of considerable importance in determining its suitability for use in fabricating cold weather protective gear and clothing. List five (5) factors which contribute to thermal properties of fabrics **(5)**
- (b). With the aid of a diagram describe the Spray Test. **(10)**
- (c). Fabric pilling is a serious problem for the apparel industry. Discuss **(10)**

QUESTION 2

- (a). State the reasons for the determination of cotton fibre properties and how the raw material characterisation data can be utilized in a spinning mill. **(15)**
- (b). With the aid of a line diagram describe the principle of operation of the Uster Evenness tester. **(10)**

QUESTION 3

- (a). Discuss the causes and effects of yarn hairiness and identify factors that influence the degree of hairiness in Ring spun yarns. **(15)**

- (b). Give the advantages of the new Zweigle Hairiness Tester hairiness test methods and how the test speed affect the results. (10)

QUESTION 4

- (a). What is the function of twist in yarns? State what precautions must be taken during twist determination to ensure that reliable result are obtained. (15)
- (b). With the aid of diagrams of idealised elements of a yarn, derive the twist factor formula. (5)
- (c). Given that yarn A is 25 tex with 6 turns/cm and yarn B 36 tex with 5 turns/cm. Determine which yarn has a higher degree of twist hardness. (5)

QUESTION 5

- (a). State the disadvantages of the presence of neps that results in an unacceptable quality of the yarn and fabrics. (15)
- (b). With the aid of diagrams, describe the measurement of neps using the Advance Fibre Information System-AFIS (10)

END OF EXAMINATION QUESTION PAPER