

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF TECHNICAL TEACHER EDUCATION
SUPPLEMENTARY EXAMINATION NOVEMBER 2010
FINISHING AND FINISHES TBE 1291

TIME: 3 HOURS

INSTRUCTIONS

Answer **ALL** questions from Section A and **ANY 3** from Section B. Section A carries **40 marks** and each question in Section B carry **20 marks**.

QUESTION 1

- a) Explain the theory of drying in finishing of textile fabrics. [5]
- b) Calculate the % expected add-on, given the roll of fabric weighted 150kg dry and 195kg after wet processing treatment. The bath concentration was 30%. [5]
- c) Explain the operations of the following pieces of equipment used in the application of chemical finishes and dyes,
 - i. Engraved roll applicator
 - ii. FFT Applicator
 - iii. Knife coaters [10]

QUESTION 2

With the aid of suitably labelled diagram, explain the principal machine features and uses of a raising machine in textile finishing. [10]

QUESTION 3

- a. What are the causes of 'Yellowing?' [5]
- b. State the advantages and disadvantages of carbamates in textile finishing. [5]

SECTION B

QUESTION 4

Physical and or chemical processing of cotton fabrics can impart easy care properties on cotton fabrics. Discuss the nature of these easy care properties, together with the processes and machines necessary to deliver them. Include in your discussions the relative merits of each of the application processes. [20]

QUESTION 5

- a. Compare and contrast the properties of anionic and cationic softeners. [10]
- b. Explain with examples, how cationic softeners can be made from the following classes of compounds in textile finishing;
 - Amino acids
 - Amino amides
 - Fatty amides
 - Quaternary ammonium salt [10]

QUESTION 6

- a. A stenter machine is a multifunctional piece of equipment. Clearly explain this statement, giving at least four examples of processes/functions that a stenter can accomplish. [10]
- b. Give an account of the various methods which can be used to apply chemical finishes. [10]

QUESTION 7

In the context of durable press finishes for cellulose,

- a. Discuss catalysts which can be used. [10]
- b. Explain at least two negative effects that the presence of buffers might have on catalysts. [10]

END OF EXAM PAPER