NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF TECHNICAL TEACHER EDUCATION

END OF SEMESTER EXAMINATIONS SEPTEMBER 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 carries **20 marks.**

QUESTION 1

a) Explain the phenomenon of migration in the context of drying. [2]

b) Calculate the % expected add-on, given the following information

Bath concentration 15%
Mass of solution 2.25g
Mass of fabric 7.5g [4]

c) Explain the operations of the following pieces of equipment used in the application of chemical finishes and dyes,

i. stenter frame
ii. kiss roller
iii. padder [9]

QUESTION 2

Draw a labeled diagram of a sanforizer suitable for stabilizing fabric. Explain the principle behind fabric stabilization using a sanforizer. [10]

QUESTION 3

Discuss carpet anti soiling treatments. [10]

SECTION B

QUESTION 4

A number of machines are used to impart physical finishes to textiles. With the aid of clearly labeled diagrams, explain two machines used to impart physical finishes to textiles, briefly explaining how they achieve the desired effect(s). [20]

QUESTION 5

An antistatic agent can be defined as a 'substance applied to a textile to prevent the accumulation of static charge'.

a. Explain how static charge is generated in textiles. [5]
b. Giving examples explain why it is essential to apply nondurable handbuilders to fabrics. [5]
c. What are hand builders? Give as detailed an account as you can of durable handbuilders. [10]

QUESTION 6

a. Explain with equations what causes fish odor in some finished fabrics. [5]
b. Discuss methods and equipment used in chemical finishing. [15]

QUESTION 7

a. What are the causes of 'Yellowing?' [5]
b. State the advantages and disadvantages of silicone water repellents. [5]
c. State the main types of drawbacks that are faced when using cotton fabric that has not been exposed to durable press finishing. [5]
d. List five (5) possible reasons why Softeners are in demand. [5]

QUESTION 8

a. Write equations showing how magnesium chloride (MgCl), can be used as a catalyst in the reaction of N-Methylol compounds with cellulose and give reasons why is it preferred to Bronstead acids. [10]
b. Explain why fabrics wrinkle and explain why cross-linking of cellulose and other fibres help to reduce wrinkling of fabrics. [10]

END OF EXAM PAPER