NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF TECHNICAL TEACHER EDUCATION

END OF SECOND SEMESTER EXAMINATIONS - SEPTEMBER 2010

TBE 1290 PREPARATION

TIME: 3 HOURS

INSTRUCTIONS

1. Answer **ALL Questions**.

Question 1

(a) Discuss the classification and application of acid dyes. **[6marks]**

(b) Explain the classification of direct dyes. **[6marks]**

(c) Most direct dyes have limited wet fastness in medium to full shades unless they are after-treaded. List six methods of improving fastness properties of direct dyes. **[6 marks]**

Question 2

(a) State and explain the main stages in the dyeing of cellulosic fabrics with vat dyes. Comment on the fastness properties of this class of dyes. **[6marks]**

(b) Sulphur dyes occupy an important place in dyeing of cotton. Explain why. **[4marks]**

(c) Explain the uses of caustic soda solutions in the treatment of cellulosic fabrics indicating the technical and performance attained. **[4marks]**

(d) Explain the aims and objectives of fabric preparation. **[6marks]**

Question 3

(a) What makes reactive dyes altogether different from other dyes used for cellulose? **[2marks]**

(b) When dyeing with reactive dyes, fast addition of alkali may cause fast strike. Explain why. What problem/s can this cause? **[4 marks]**

(b) Why do reactive dyes have a relatively large number of sulphonic acid groups? **[2marks]**

(d) Outline the fastness properties of reactive indicating what end uses would products dyed with these dyes be used for. **[6marks]**

(e) Why is it essential to use retarders when dyeing acrylics with basic dyes? Give examples of some common retarders. **[3marks]**

(f) Given the following: Weight of fabric to dyed 500kg
Liquor ratio 10:1
Salt 20g/l
Depth of shade 2%
Calculate

i. amount dye required
ii. amount of salt
iii. amount of liquor

[3marks]

Question 4

(a) What is printing? Briefly outline the early printing methods. **[10marks]**

(b) Explain the printing procedure adopted when printing with pigments. **[4marks]**

(c) Give reasons why pigment accounts for more than fifty percent of all printing worldwide. **[6marks]**

Question 5

(a) Explain the role played by the following in a printing paste:

i. water
ii. thickener
iii. fixer
iv. crosslinking agent
v. urea

[5marks]

(b) Discuss the procedures for printing of cellulosics using reactive dyes.

[10marks]

(c) Briefly explain the following printing machines: flatbed and rotary.

[5marks]

END OF EXAMINATION