NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF TEXTILE TECHNOLOGY
SPECIAL SUPPLIMENTARY EXAMINATIONS JULY 2006
TEXTILE PRINTING TXT 4123
TIME: 3 HOURS

INSTRUCTIONS

Answer **ANY FIVE** Questions.

SECTION A

Answer **ALL** questions in this section.

1. (a) Explain or define the following
   - (i) Print paste rheology
   - (ii) Seersucker
   - (iii) Discharge agents
   - (iv) Resist printing
   - (v) Real wax prints
   - (vi) Bleeder styles
   - (vii) Burnout style
   - (viii) Back grey
   - (ix) Step and repeat
   - (x) Half tone (10 marks)

   (b) Write short notes on engraving process of two (2) of the following:

   - (i) rotary screen (5 marks)
   - (ii) copper roller (5 marks)
   - (iii) flat screen (5 marks)

2. (a) Write short notes of the main factors that must be taken into consideration when deciding the methods for printing fibre blends. Your notes may consider a polyester/cellulosic blend or any other blend of your choice. (10 marks)

   (b) Explain the appropriate steps taken to introduce a design into a screen "ready for printing'. (10 marks)

3. Discuss the increasing importance in recent years of pigment printing.

Comment on print paste formulation, choice of auxiliaries, selection of pigments and processing conditions. Indicate the circumstances in which pigments are used for printing alongside other dye classes.

4. Write an essay on the "carpet printing".

5. Critically discuss the following statement: "The use of discharge and resist printing techniques provides a number of technical and economic advantages but makes considerable demands on the printer". With reference to one of the following resists prints, discuss 9(a) how it can be carried out successfully and 9(b) the need for careful process control. (i) a wax resist under a reactive dyed ground (ii) a reactive dye resist under a reactive dye overpad (iii) a pigment colour resist under a reactive dye overpad. (20 marks)

6. Evaluate the technical and economic significance of the following recent trends in printing.

   (a) the emergence of foam printing techniques.
   (b) The use of laser technology in screen production
   (c) Automation and computer control within the colour kitchen

   (20 marks)

7. Discuss how the mechanisms of the transfer process influences the types of machinery used in continuous vapour-phase printing and wet-transfer printing. (20 marks)

8. Discuss the development of jet printing both on paper and on textiles. Outline the principles involved for the two substrates and consider future developments. (20 marks)

END OF QUESTION PAPER