MAJOR TEST - FIRST SEMISTER 2004 – 2005

TT431N Dyeing of Manmade Fibres and Blended Textiles

02 – 12 - 2004 ---- 01.00 – 03.00 AM ---- Tx 203

PART A

ANSWER ANY SIX QUESTIONS FROM PART A

1. Discuss the effect of pH on the dyeing of nylon with acid dyes. Why nylon is not dyed at or below its isoelectric point. **[3]**

2. Explain why most methods of determining diffusion coefficients of dyes in fibres lead only to an average or apparent values. Briefly describe one experimental procedure for determining such value of any dye-fibre of your choice. **[3]**

3. What is the function and role of an accelerant in the Thermosol dyeing of polyester fabrics? Explain the mechanism. **[3]**

4. Explain with appropriate example, how Glass transition temperature of the fibre affect their dye uptake. **[3]**

5. Comment on the compatibility of disperse dyes and describe a method used for formulating Rapid Disperse Dyes. **[3]**

6. Define activation energy of diffusion. Describe how this quantity may be determined and indicate the kind of information that can be derived from knowledge of activation energy of diffusion. **[3]**

7. Comment on the nature of dye – polymer interactions in the dyeing of textile substrates with organic dyes. **[3]**

PART B

8. Mention the merits and shortcomings of mass coloration. Comment on the colorants used in the mass coloration of PET. Describe the continuous methods of mass coloration of polyester fibres. **[6]**

9. Comment and explain any one of the following two topics. **[8]**

   (a) Reverse Micelle Dyeing
   (b) Dyeing from Supercritical Carbon Dioxide

10. Comment and explain any one of the following two topics. **[8]**

    (a) Dyeing of Soybean Fibres
    (b) Dyeing of Micro-denier Polyester Fibres