MAJOR TEST
TXL242: Technology of Textile Coloration

Date: 24th Nov. 2016
Time: 10:30-12:30 hrs

Max. Marks: 40

Note: Attempt all questions [Q. No. 1 to 15]

PART –A

1. Will you use higher or lower 'raster' to produce a blotch design on high GSM fabric? – Justify your answer. 2

2. Write a process sequence with suitable chemicals to be used for discharge printing of indigo dyed cotton fabric 2

3. A Pigment prints in presence of alginate thickener appears dull – justify. 2

3 B Write down the function/s of the followings in textile printing: 1 x 4
   a) Back grey fabric and lint doctor in roller printing
   b) Sodium m-nitrobenzene sulphonate
   c) Leucotrope W in discharge printing on Indigo
   d) Rongalite C

4. The presence of free –COOH group has a role to viscosity build-up in synthetic thickener - explain 2

5. Write down **four** major differences between conventional and transfer printing 2

6. What is your preferred thickener for printing cotton with reactive dyes and why? 2

7. What selection criteria will you consider to identify a thickener for pigment printing? Explain your thoughts with a suitable example. 1 + 2

8. What is the source of 'Registration' fault in screen printing? How will you minimize this issue? 2

9. Will you consider 'angle of squeegee' during stroke to produce an intricate design (Hand screen printing operation)? What is the plus point of using 'rod squeegee' over 'blade squeegee'? 2

10. Will you prefer a route 'Pad-Dry-Steam' for pigment printing over 'Pad-Dry-Cure'? Elaborate your answer with justification. 2

11. Do you find any connection of substantivity of a reactive dye towards wash fastness of the dyed cotton fabric (If yes, how?)? In a reactive dye bath, if the exhaustion is 85% and 80% of the exhausted dyes are fixed; determine the 'realization of colour'. 1 + 1

12. What kind of reactive dyes (MCT or DCT) will you prefer for Printing? Give suitable reason. What is the advantage of hetero-bifunctional reactive dyes over homo-bifunctional variety? 2 + 1

13. Beer's law is said to hold if the plot of A vs. C at fixed values of L is linear over the range 'T'= ……to 'T'= ….(Fill the gaps, where, T: Transmittance). 1 + 1

Categorize the followings as chromophore, auxochrome and chromogen.

-N=O, -NH$_2$, -OH, C=S

PTO

14. *1:1 metal complex dyes require very strong acidic pH for dyeing woolen fabric whereas 1:2 metal complex dyes exhaust at slightly acidic pH – explain the reasons behind.* 1

15. *Explain the following statements* **with suitable reasons** (True / False): 1 x 4

a) In acid dyeing of wool, dyeing with levelling dyes has to be carried out at pH range 2-4 whereas super-milling dyes can be exhausted at almost neural pH (5 – 7).

b) For discharge printing, Hydros ($Na_2S_2O_4$) is the preferred chemical over Rongalite c (Hydroxymethane Sulphinate).

c) PET can be dyed with all types of disperse dyes using carrier

d) In thermosol dyeing of PET, dyeing and heat-setting happens simultaneously.

16. For printing PET/Cotton blend fabric – choose the printing parameters like pH, temperature (for dry heat fixation) and after wash or soaping temperature with justification. How does 'Procilene' system (mixture of dispersol PC/Procion T dye) meet the ideal condition for printing of PET/Cotton blend fabric? 1.5 1.