L 1170

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Fourth Semester

Textile Technology

TT 1251 — CHEMISTRY FOR TEXTILES

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the structure of cellulose from monomer to polymer.

2. Indicate the textile fibre which contains more lignin in its structure. Also give the structure of lignin.

3. Write four important amino acids present in silk, with structure.

4. What are the amino acids differentiating silk from wool?

5. List out the important reductive bleaching agents.

6. Specify the important derivatives from pyridine.

7. What are ingrain dyes?

8. What do you mean by substantive natural dyes?

9. Differentiate between substantivity and affinity.

10. What do you mean by Time of Half–dyeing?

PART B — (5 × 16 = 80 marks)

11. (i) Explain the mechanism of disperse dyeing. (8)

(ii) List out various methods of dye estimation. Explain the application of spectrophotometer in dye estimation. (8)

12. (a) Elaborate on derivatives of cellulose.

Or

(b) Give examples for regenerated cellulose. Explain any one of the important regenerated celluloses with its chemical properties suitable for textile uses. (2 + 14)

13. (a) What are the different reactive sites present in wool? Explain the properties of wool fibres based on the reactive sites. (6 + 10)

Or

(b) What are the impurities present in cotton fibre? Explain the impact of these impurities on cotton fibre properties. How these impurities are removed from cotton fibre? (4 + 8 + 4)

14. (a) Explain the principle and mechanism of hydrogen peroxide.

Or

(b) (i) Compare the action of bleaching between sodium hypochlorite and sodium chlorite. (8)

(ii) Discuss about the important derivatives obtained from pyrrole and Furan. (8)

15. (a) Explain various adsorption isotherms in dyeing.

Or

(b) Derive William Landel Ferry (WLF) equation and explain its significance.
