

**B.TECH DEGREE EXAMINATIONS: JUNE 2010**

Second Semester

**CHY105: CHEMISTRY FOR TEXTILES**

(Common to B.Tech-Textile Technology &amp; Fashion Technology)

**Time: Three Hours****Maximum Marks: 100****Answer ALL Questions:-****PART A (10 x 1 = 10 Marks)**

- Which of the following is soluble in water?  
A. CS<sub>2</sub>                      B. C<sub>2</sub>H<sub>5</sub>OH                      C. CCl<sub>4</sub>                      D. CHCl<sub>3</sub>
- The hydrogen bonding is stronger in  
A. O-H ...S                      B. S-H ...O                      C. F-H ...O                      D. F-H ...S
- Functionality of ethylene glycol is  
A. 4                      B. 3                      C. 2                      D. 1
- Styrene is one of the constituent for the preparation of  
A. Butyl rubber                      B. Buna-S rubber                      C. PET                      D. Teflon
- 1, 2-dihydroxyanthraquinone is commonly called  
A. Congo red                      B. Indigo                      C. Alizarin                      D. Eosin
- The common carrier gas in gas chromatography is  
A. Nitrogen                      B. Oxygen                      C. Chlorine                      D. CO<sub>2</sub>
- Chemically, rust is represented as  
A. FeO                      B. FeSO<sub>4</sub>.2H<sub>2</sub>O                      C. Fe<sub>2</sub>O<sub>3</sub>. x H<sub>2</sub>O                      D. Fe(OH)<sub>2</sub>
- Substances promoting the formation of a protective film on a metal and thus preventing corrosion are known as  
A. Neutralizers                      B. Catalysts                      C. Inhibitors                      D. Passivizers
- Hardness to water is caused by  
A. CaCl<sub>2</sub>                      B. NaCl                      C. Na<sub>2</sub>CO<sub>3</sub>                      D. KCl
- The process of destroying the pathogenic bacteria in drinking water is called  
A. Reverse osmosis                      B. Sterilization                      C. Coagulation                      D. Osmosis

**PART B (10 x 2 = 20 Marks)**

- What is essential difference between electrovalent bond and a covalent bond?
- State Fajan's rule.
- Give equation for the preparation of nylon 6, 6.
- Define degree of polymerization.
- What are mordant dyes?

16. Define auxochrome. Give an example.
17. Define Pilling Bedworth rule.
18. What are lacquers?
19. What are zeolites?
20. What is break point chlorination?

**PART C (5 x 14 = 70 Marks)**

21. (a) (i) What are Vander Waal's forces ? What are its physical properties? (7)
- (ii) Account for the following
- a) water is a liquid while hydrogen sulphide is a gas. (7)
  - b) density of ice is less than the density of water.

**(OR)**

- (b) (i) Explain  $sp^2$  and  $sp$  hybridizations with examples. (7)
- (ii) What is dipole moment? What are its applications? (7)

22. (a) (i) Discuss the free radical mechanism? (7)
- (ii) Differentiate thermoplastics from thermosetting plastics. (7)

**(OR)**

- (b) (i) What are rubber blended plastics ? Explain its uses. (7)
- (ii) Write notes on TEFLON. (7)

23. (a) (i) Write notes on natural dyes. (7)
- (ii) Explain the synthesis of malachite green dye. (7)

**(OR)**

- (b) (i) What are vat dyes? Give an example. What are its uses? (7)
- (ii) Explain the principle and working of column chromatography for the separation of mixtures of dyes. (7)

24. (a) (i) Explain the principle, theory and mechanism of electrochemical corrosion.

**(OR)**

(b) (i) What are special paints ? Explain its uses. (7)

(ii) How are metal pipelines protected from corrosion by sacrificial? Anode method. (7)

25. (a) (i) Name the various methods which are used for softening of water. Explain with diagram the best method and why? (10)

(ii) What is calgon conditioning? (4)

**(OR)**

(b) (i) What are effluents ? Mention the chemical constituents present in textile industry effluents? Explain the various stages involved in the treatment of effluents from textile industries.

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