

B.TECH. DEGREE EXAMINATIONS: APRIL / MAY 2011

Second Semester

CHY105: CHEMISTRY FOR TEXTILES

(Common to Textile Technology and Textile Technology (Fashion Technology))

Time: Three hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

- The molecule having highest percentage of ionic character is
A) HI B) HBr C) HCl D) HF
- Which of the following molecule does not have dipole moment greater than zero?
A) NH₃ B) H₂O C) CHCl₃ D) CCl₄
- Which of the following is a branched chain polymer?
A) HDPE B) LDPE C) Isotactic polypropylene D) Amylose
- A polymer with high molecular weight and high degree of crystallinity would behave as
A) Soft and waxy B) Hard and flexible C) Hard and tough D) Soft and flexible
- Malachite green is obtained by condensing benzaldehyde with two molecules of
A) N,N-Dimethylaniline B) m-phenylenediamine C) Aniline D) o-Toluidine
- For basic compounds, commonly used adsorbent in column chromatography is
A) Alumina B) Silica C) Zeolite D) Charcoal
- Chemical formula for rust is
A) FeO B) Fe₂O₃.xH₂O C) Fe(OH)₂ D) FeCl₃
- Shellac is an example for
A) Varnish B) Corrosion inhibitor C) Paint D) Lacquer
- A semipermeable membrane allows the flow of
A) Solvent molecules B) Solute molecules
C) Both solute and solvent molecules D) Neither solute nor solvent
- Colloidal conditioning is done by using
A) EDTA B) Lignin
C) Sodium hexa metaphosphate D) Sodium dihydrogen phosphate

PART B (10 x 2 = 20 Marks)

- How sigma bond stronger than pi bond?
- Why glycerol is more viscous than ethanol?

13. What is degree of polymerization?
14. Why blending of rubber with plastic done?
15. What is gas chromatography?
16. Write the preparation of Bismark brown.
17. State Pilling – Bedworth rule.
18. What are lacquers?
19. What are zeolites?
20. What is calgon conditioning?

PART C (5 x 14 = 70 Marks)

21. a) (i) List the properties of covalent compounds. (7)
(ii) How is hydrogen bonding classified? Explain with two examples. (7)

(OR)
- b) (i) What is dipole moment. Give its application. (7)
(ii) Write a note on Vanderwaal's force. (7)
22. a) (i) Explain the mechanism of free radical polymerization. (7)
(ii) Explain the process of vulcanization. Compare the raw rubber with vulcanized rubber. (7)

(OR)
- b) (i) Explain any two effects of structure on the properties of a polymer. (7)
(ii) Give the preparation and applications of polystyrene and nylon 66. (7)
23. a) (i) Give a brief account of natural dyes. Give its limitations. (7)
(ii) How will you synthesise alizarin from phthalic anhydride? (7)

(OR)
- b) (i) Give the synthesis and uses of congo red. (7)
(ii) How will you separate a mixture of dyes by column chromatography? (7)
24. a) (i) Explain the principle of electrochemical corrosion by oxygen absorption with diagram. (7)
(ii) Give the composition and uses of fire retardant and luminous paints. (7)

(OR)
- b) (i) How is corrosion prevented in shiphulls and transmission line towers? Explain with diagram. (7)

- (ii) State the constituents of oil paints with examples and their functions. (7)
25. a) (i) Describe the use of ion-exchange resins in the purification of water. (7)
- (ii) Discuss the disadvantages of using hard water in textile industries. (7)
- (OR)**
- b) (i) Explain with diagram the purification of water by electro dialysis. (7)
- (ii) Explain any one common effluent treatment method with flow chart. (7)
