

B.TECH DEGREE EXAMINATIONS: DEC 2014

(Regulation 2013)

Second Semester

U13CHT204 : CHEMISTRY FOR TEXTILES

(Common to FT & TXT)

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

- The reagent used to disperse the dyes is
 - Sodium lingo sulphates
 - Sodium aluminum silicate
 - Mordants
 - Sodium phosphates
- _____ reacts with basic cations in the dye yields complex salts which is dissolved by adding retarders.
- Polystyrene containing Amino group, is an example for
 - Cation selective membrane
 - Anion selective membrane
 - Cation exchange resin
 - Anion exchange resin
- Chemical name of Zeolite is _____
- The polymer with good strength and elongation when vulcanized into rubbery products is called as
 - Elastomers
 - Fibres
 - Resins
 - Plastics
- With increase in molecular mass of the polymer, its glass transition temperature (T_g)_____
- The water solubility of dyes can be increased by introducing
 - SO₃Na group
 - COOH group
 - OH group
 - All the above
- Nitromethane is colorless whereas, nitrobenzene colored due to _____
- An electropositive element will combine with electronegative element to form _____ bond
 - Covalent
 - Ionic
 - Coordinate
 - Hydrogen
- The intermolecular attractive forces that exist between two polar molecules is known as _____

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. What are leveling agents?
12. Define dye fixing agents.
13. Differentiate Scale and Sludge.
14. What are the chemical impurities present in water?
15. What is the significance of functionality?
16. Define degree of polymerization.
17. State the preparation of alizarin.
18. Azobenzene is pale yellow in colour and *p*-hydroxyl azobenzene is deep yellow – Account.
19. What is electrovalent bond?
20. A coordinate bond consists of a pair of electrons between two atoms. How does this pair of electrons exist between two atoms?

PART C (5 x 14 = 70 Marks)

(Not more than 400 words)

Q.No. 21 is Compulsory

21. (i) Paraphrase the types of dispersing agent used in textile industries (8)
(ii) What are Retarders? Explain the mechanism of retarding agents (6)

22. a) Discuss the several treatment methods employed for the conversion of natural water into domestic water
(OR)
b) Sketch out and describe the significant role of external treatment methods for the conversion of hard water to soft water

23. a) (i) Explain the different steps involved in free radical mechanism. (8)
(ii) Compare and contrast the thermoplastics and thermosetting polymers (6)
(OR)
b) (i) Discuss how the structure of the polymer is related to properties. (8)
(ii) Give the preparation and properties of Nylon 6,6 (6)

24. a) (i) What are triarylmethane dyes? Formulate the structure of Malachite green and give its properties (8)
(ii) Discuss the color and constitution theory with suitable examples (6)

(OR)

- b) (i) How is Indigoid dyes prepared? Circle out the chromophores and auxochromes present in indigoid dyes (8)
- (ii) Describe the interactions between dyes and fibres (6)
25. a) (i) Illustrate the types of H – bonding with suitable examples and discuss its consequences (10)
- (ii) What are Van der Waal's forces? Discuss the factors contributing to it. (4)
- (OR)**
- b) (i) With neat sketch explain the Principle, instrumentation and applications of thermogravimetric (TG) analysis (10)
- (ii) Write briefly on the nature of covalent bond (4)
