Register No: ……

B.TECH DEGREE EXAMINATIONS: APRIL/MAY 2011

Second Semester

BIOTECHNOLOGY

CHY106: Chemistry for Biotechnology

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10 x 1 = 10 Marks)

1. A measure of the tendency of an atom to form anion is known as _____

A. Ionisation Energy B. Electron Affinity C. Covalency D. Dipole moment

2. _____ bond is known as dative bond.

A. Hydrogen bond B. Ionic bond C. Covalent bond D.Co-Ordinate bond

3. Which of the following compounds will exhibits cis-trans isomer?

A. 2-Butene B. 2-Butyne C. 2-Butanol D. Butanol

4. Chiral molecules are those which

A. Are not super imposable as their mirror image

B. Are super imposable as their mirror image

C.Show geometrical isomers

D. Are Unstable molecules

5. Presence of oil in boiler feed water can be removed by the addition of

A.Sodium carbonate B. Aluminium sulphate C.Sodium sulphate D.Milk of lime

6. Super filteration of water is known as

A. Electrodialysis B.Reverse osmosis C.Ion exchange D.UV treatment

7. Terelene is a polymer made by

A. Buta diene and Styrene B.Chloroprene

C.Urea and Formaldehyde D. Dimethyl terephthalate and Glycol.

8. Polymerisation in which two or more chemically different monomers take part is called

A. Addition Polymerization B. Condensation Polymerization

C. Co- Polymerization D. Coordination Polymerization

9. Absorbency of the super absorbent polymer is dependent on

A. Number of monomers B. Chain length

C. Degree of cross linking D. Method of preparation

10. The Complexing agent used in complexometric titration of calcium in milk is

A. Ammonia B. EDTA C. Magnesium D.Sodium hydroxide

PART B (10 x 2 = 20 Marks)

11. CCl_4 has no dipole moment but $CHCl_3$ has. Why?
12. What is meant by polar covalent bonds?
13. What are chiral reagents?
14. What are the two necessary conditions for a compound to show geometrical isomerism?
15. What is Calgon conditioning?
16. Why the water softened by Zeolite process is unfit for use in boilers?
17. Give reason for the extreme toughness and exceptionally high chemical resistance of Teflon.
18. Differentiate addition and condensation polymerizations.
19. Write the reactions involved in the analysis of calcium in kidney stones**.**
20. How the estimation of phosphoric acid in soft drink carried out?

PART C (5 x 14 = 70 Marks)

21. a) (i) Differentiate ionic and covalent bonds. (7)

(ii) Explain sp^3 hybridisation with a suitable example. (7)

(OR)

b) What is hydrogen bonding? Explain the types of hydrogen bonding with suitable examples. Explain the conditions on which each can be formed and the consequences.

22. a) Write note on

(i) Resolution of race mates (7)

(ii) Asymmetric Synthesis (7)

(OR)

b) What are Conformational isomers? Discuss the conformational isomers of ethane.

23. a) How is boiler feed water softened by

(i) Ion Exchange Process (7)

(ii) Reverse Osmosis (7)

(OR)

b) Write note on

(i) Boiler Corrosion (10)

(ii) Caustic embrittlement (4)

24. a) (i) Explain the free radical mechanism of addition polymerization. (7)

(ii) Differentiate between thermosetting plastics and thermoplastics (7)

(OR)

b) (i) State the drawbacks of raw rubber and explain the process of vulcanization of rubber. (7)

(ii) Explain the preparation, properties and uses of Nylon 6, 6. (7)

25. a) Explain the procedure for DNA Extraction and Identification from green peas.

(OR)

b) Describe the procedure for the determination of calcium in milk powder by EDTA method.

****