

**A 12**

**Sreenidhi Institute of Science & Technology**

(An Autonomous Institution)

**Code No: 121CH03**

**B. TECH. I – Year II – Semester Examinations, July, 2014 (Regular)**

**CHEMISTRY FOR BIOTECHNOLOGISTS (BT)**

**Time: 3 Hours Max. Marks: 70**

**Note: No additional answer sheets will be provided.**

**Part-A**

**Max.Marks:20**

**Answer all QUESTIONS.**

1. Define Covalent bond? Differentiate polar and non polar covalent bond.

2. What is heat of combustion?

3. Write Hess law.

4. Define Order and molecularity of a reaction.

5. Calculate Molarity of 1.65gm of Na2C03 dissolved in 500 ml water.

6. Define di-electric constant.

7. The colour of water present in sea is in blue. Explain.

8. Why Mesomeric effect is stronger than Inductive effect?

9. Give the significance of rate law.

10. What are the criteria considered in optical isomerism?

**Part – B**

**Max. Marks: 50**

**ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.**

1. Write a note on:

(i) dipole moment (ii) Vander waal forces (iii) Hydrogen bond

(iv) Covalant and non covalent interactions

2. a) What is heat of reaction? Explain effect of temperature on heat of reaction. [6M]

b) Calculate enthalpy change for the following reaction [4M]

CCI4(g) C(g) + CI(g)

Hg (CCI4) = 30.5 KJ/Mol, Hf (CCI4) = -135.5KJ/Mol,

Ha (C) = 715.0 KJ/Mol, Ha (CI2) = 242.0 KJ/Mol.

3. a) Derive rate constant of first order reaction. [7M]

b) Give the significance of Second order reaction. [3M]

4. a) Explain the applications of catalyst in the industry.

b) Write a note on equilibrium constant and reaction rates.

5. What is elevation of boiling point? Explain in detail.

6. a) Explain surface are calculation by Langmuir adsorption isotherm.

b) What are advantages-of BET isotherm?

7. a) Explain mesomeric effect with suitable examples. [6M]

b) Write a short note on optical isomerism. [4M]

8. a) Explain stability of carbocation intermediates. [6M]

b) What is SNi ( intramolecular nucleophilic substitution reaction). Give its mechanism. [4M]

**-- 00 -- 00 --**