Dr Gopal

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
SUMMER SEMESTER MID EXAMINATION- JUNE-2018
B.Tech (BT) II Semester

COURSE CODE:14B11BT211 MAX. MARKS: 50
COURSE NAME: General Chemistry
COURSE CREDITS: 4 MAX. TIME: Two Hours

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Use of calculator is allowed*

Q1. What is principle of chromatography? Discuss various types of chromatography and its applications. [7]

Q2.Explain step wise mechanism of nucelophilic substitution reactions by taking suitable examples. [6]

Q3. What are enantiomers? How they are different from diastereomer? Explain methods in details for separation of enantiomers. [7]

Q5. Answer/Explain the followings. [3x6=18]

a. Conformations and Configurations of organic compounds
b. Henderson Hasselbalch equation
c. What is optical activity? How it is measured? How could it be decided whether an observed dextrorotation of +30° is not actually a levorotation of-330°?
d. Explain CIP rules for determination of R/S and E/Z configurations
e. Discuss the structure of benzene. Explain the criterion for determining aromaticity, anti aromatic and non aromatic compounds.
f. Effects of Intra molecular hydrogen bonding and inter molecular hydrogen bonding

Q6. Answer the following briefly. [2x6 =12]

a. Draw the structure of a) Ethyl propanoate b) N,N-diethyl formamide
b. How hydrogen bond is classified? Explain with atleast two examples.
c. Specific rotation of (R)-2-butanol is -13.5^0 . if 1.00 gm of its enantiomers is dissoloved in 10 ml of ethanol and placed in a sample cell with length of 10 cm. What will be its observed rotation?
d. What is a Grignard reagent? Explain its synthetic utility.
e. Give one example of polar protic, polar aprotic and non polar solvents
f. Draw the mechanism of E2 elimination reactions.