2007 ANDHRA UNIVERSITY

II YEAR B.E/B.TECH DEGREE EXAMINATIONS

ORGANIC CHEMISTRY

(CHEMICAL ENGINEERING)

TIME: 3 HOUR
MARK: 70

- Question 1 Is Compulsory
- Answer Any Four From Questions 2 To 8
- All Questions Carry Equal Marks

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1. a) What is the optical activity? Give the criteria. 3M

b) Why it is more difficult to nitrate nitrobenzene than benzene? 3M

c) What is Diazotization? Explain the coupling reaction with an example. 3M

d) How do you synthesise tertiary alcohols through

Grignard's method? 3M

e) Fructose reduces Fehling's solution. Being a ketohexose. Explain. 3M

2. a) A compound A, molecular formula C11 H11 NO4, on treatment with aqueous NaOH yields. Ethanol and compound B gives C, C9 H1 NO4 which is soluble in aqueous sodium carbonate with effervescence. Catalytic reduction of B gives C, C9 H11 NO2, which can be diazotized. Vigorous oxidation of B gives a compound which can be prepared by the action of nitric acid and sulphuric acids on benzoic acid. Discuss their reactions. 10M

3. a) At low temperature, the 1, 2-addition product of the reaction of HBr and 1,3-butadiene is. major product of the reaction. At higher temperature, the 1,4-addition 9 product is the major product. Write a complete explanation. 8M

b) Write a note on Wurtz reaction.

4. a) Classify amines giving examples. Discuss the effect of substituents on the basicity of aromatic amines. 8M

b) Write a note on sulpha drugs. 7M

5. a) Illustrate with examples, how in aromatic compounds further substitution is governed by the nature of substituent already present in the ring. 9M

b) Write a note on Friedel Crafts alkylations and its limitations. 6M

6. Write notes on:

a) Perk inconsideration 5M

b) Wiliamson Synthesis 5M

c) Fries rearrangement. 5M

7. a) How Primary, Secondary and Tertiary alcohols are distinguished from one another? 9M

b) Discuss the industrial preparation of phthalic acid.6M

8. a) Describe the ring structure of D-glucose. 7M

b) How will you convert D-glucose into Fructose and Vice-Versa? 8M