Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-III Regular / Remedial Examination December 2010

Subject code: 132805

Subject Name: Organic Chemistry

Date: 20 /12 /2010 **Time: 10.30 am – 01.00 pm**

Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Fill in the blanks **07**

1. The formation of Free radicals as a reactive intermediate is due to _____.
2. Haworth's synthesis is utilized to synthesise _____ hydrocarbon.
3. Distillation is carried out under reduced pressure is called as _____ distillation.
4. Sandmeyer reaction is utilized to prepare _____ molecules.
5. Green color on reaction of CU-metal with organic substance is due to presence of _____ in the molecule.
6. Grignard reaction is use to carry out _____ reactions.
7. Protic solvents release _____ during solubility.

(b) Define the following **07**

1. Bond length
2. Bond energy
3. Peroxide effect
4. Co-ordinate covalent bond
5. Pauli's exclusion principle
6. Plane polarised light
7. Heterocyclic compounds

Q.2 **(a)** Write the preparation, properties and uses of Aldehydes and Ketones **07**

(b) Answer the following.

1. Quantum number formation. **04**
2. Differentiate covalent and ionic bond. **03**

OR

(b) Answer the following

1. Write the preparation properties and uses of esters **04**
2. Explain purification of molecule through fractional crystallization **03**

Q.3 **(a)** Explain different type of organic reactions with at least two examples in each class. **07**

(b) Write a brief note on: **07**

1. Steam distillation
2. Different type of overlapping.

OR

Q.3 **(a)** Explain Aromaticity. Write different characteristic to establish a compound an aromatic. Why heterocyclic compounds are aromatic in nature. **07**

(b) Write a brief note on: **07**

1.Fractional distillation
2. Protic and aprotic solvents.

Q.4 **(a)** Discuss optical isomerism. Explain different terminology used in the same. Write the construction and working of polarimeter. **07**

(b) Write the preparation, properties and uses of. **07**

1. Pyridine

2. Acetic acid

OR

Q.4 **(a)** Discuss Structural isomerism. Write in detail the classification with two examples in each class. **07**

(b) Write the preparation, properties and uses of **07**

1. Furan

2. Nitrocellulose

Q.5 **(a)** What is polynuclear hydrocarbon? Write in detail the preparation, properties and uses of Naphthalene. **07**

(b) Write in brief: **07**

1. Beleistein test and Lassigne's test

2. Hybridisation

OR

Q.5 **(a)** Write a note on: **07**

1. Nucleophillic addition reaction

2. Preparation, properties and uses of Anthracene.

(b) Write in brief: **07**

1. Electrophillic addition reaction

2. Diazotisation reaction and Cummene reaction.

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