

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – SUMMER 2013****Subject Code: 130501****Date: 27-05-2013****Subject Name: Organic Chemistry and Unit Processes****Time: 02.30 pm - 05.00 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. _____ & _____ are two type of bond fission.
 2. Modern theory of colour gives _____ & _____ effects.
 3. _____ & _____ processes are used for preparation of synthetic petrol.
 4. Stereo isomerism is classified into _____ & _____ isomers.
 5. Sucrose on hydrolysis gives _____ & _____.
 6. Two examples of Polyamides are _____ & _____.
 7. Examples of any two oxidizing agents are _____ & _____.
- (b) Define the following** **07**
1. Dyes and Pigments.
 2. Sulfation and Sulponation
 3. Hydration and Hydrogenation
 4. Octane no and Cetane no
 5. Optical isomerism.
 6. Saponification and Esterification.
 7. Diazotisation
- Q.2 (a) Explain in detail the distillation of Crude oil showing the importance of different fractions obtained.** **07**
- (b) Explain different theories of colour.** **07**
- OR**
- (b) Write in detail the classification of Synthetic dyes according to its structure and application.** **07**
- Q.3 (a) Explain different types of synthetic and natural polymer. Explain Polyamides in detail.** **07**
- (b) Write preparation, properties and uses of Benzene and Phenol.** **07**
- OR**
- Q.3 (a) Define Isomerism. Show its importance in organic molecules. Explain Geometrical Isomerism in detail.** **07**
- (b) Write the laboratory preparation of Grignard reagent. Show its uses in formation of alcohol, acids and esters.** **07**
- Q.4 (a) Explain with mechanism Oxidation and Reduction reaction with at least two examples in each.** **07**
- (b) Write preparation, properties and uses of Acetone and Ethyl alcohol.** **07**
- OR**
- Q.4 (a) Explain with mechanism Amination and Nitration reaction with a at least two examples in each.** **07**
- (b) Give classification of Carbohydrate and write in detail the conversion of** **07**

Aldohexose to Ketohexose and Ketohexose to Aldohexose.

- Q.5 (a)** Explain Carbonium ion, Carbanion ion, Free radical, Electrophiles and Nucleophiles. **07**
- (b)** Explain with mechanism Cannizzaro, and Reformatsky reaction. **07**

OR

- Q.5 (a)** Define Polynuclear hydrocarbon and Heterocyclic compound. Write preparation, properties and uses of Naphthalene and Pyrrole. **07**
- (b)** Explain the importance of Carboxylic acid by forming the derivative carbonyl halide, carbonyl amide, ester and anhydride with at least one example. **07**
