

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – WINTER 2013****Subject Code: 130404****Date: 28-11-2013****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)** Answer the following questions **14**
1. What is hybridization of carbon in ethane?
 2. Which carbocation is most stable among primary, secondary and tertiary?
 3. What is an ore?
 4. What do you mean by hydrolysis?
 5. What are Disaccharides?
 6. What is known as Vinegar?
 7. What is a Chiral Centre?
- Q.2 (a)** Name different types of bonds. Write in detail about Covalent bonds giving suitable examples. **07**
- (b)** Write a note on SN^1 and SN^2 reaction mechanism. **07**
- OR**
- (b)** Write principle involved in concentration of ore, extraction, refining and properties of copper. **07**
- Q.3 (a)** Explain in brief. **08**
1. Diastereomer and Enantiomer.
 2. Structural isomer and Stereoisomer
 3. Racemic Mixture and Resolution
 4. E and Z isomer
- (b)** Give details of Walden inversion and Optical isomerism. **06**
- OR**
- Q.3 (a)** Explain Stepwise formation of an ester from Carboxylic acid. **07**
- (b)** Give manufacturing process and Chemical properties of Acetic acid. **07**
- Q.4 (a)** What are Carbohydrates? Give its classification. **07**
- (b)** Write reaction and mechanism of Friedle-Craft's acylation. **07**
- OR**
- Q.4 (a)** Answer the following. **10**
1. What is a transition state?
 2. What is activation energy?
 3. Why H_2O is liquid and H_2S is a gas?
 4. Differentiate between ionization potential and electron affinity.
 5. Write industrial application of Uranium.
- (b)** Write a note on Geometrical isomerism. **04**
- Q.5 (a)** Give reaction mechanism of nitration of benzene. **07**
- (b)** Prepare (i) phenol from aniline (ii) benzene sulphonic acid from benzene. **07**
- OR**
- Q.5 (a)** Write preparation, properties and uses of carboxylic acid. **07**
- (b)** Give reaction mechanism for synthesis of toluene from benzene. **07**
