

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-III Examination December 2009

Subject code: 130501

Subject Name: Organic Chemistry and Unit Processes

Date: 21 / 12 / 2009

Time: 11.00am to 1.30pm

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) Define the followings (Any Seven) **07**
- | | |
|------------------|---------------------------|
| 1. Dyes | 2. Oxidation Reaction |
| 3. Starch | 4. Cracking-anti cracking |
| 5. Cetane number | 6. Asymmetric Carbon |
| 7. Hetero Atom | 8. Alkylation |
- (b) What is Electrophilic substitution reaction ? Explain the halogenation reaction with mechanism. **07**
- Q.2** (a) Write the Composition of Crude Oil. Explain preparation of "Synthetic Petrol" by Bergius process. **07**
- (b) Define Unit Process. Discuss the manufacturing of Nitrobenzene from benzene by continuous nitration with fortified spent-acid process. **07**
- OR**
- (b) What is Pigment? Explain the modern theory of colour with Bathochromic effect and Hipssochromic effect. **07**
- Q.3** (a) What is isomerism ? Explain the Geometrical isomerism in Tartaric acid and Valeric acid. **07**
- (b) Define and write the chemical formula of Sucrose. Explain the extraction of Sucrose from Cane juice with neat flowsheet diagram. **07**
- OR**
- Q.3** (a) Write the manufacturing process of Acetic acid and Oxalic acid. **07**
- (b) Write the difference between Natural and Synthetic Polymer. Explain the properties of proteins. **07**
- Q.4** (a) What do you meant by Grignard reagents ? Discuss Organomagnesium halide compound with example. **07**
- (b) Write the chemical reaction, properties and uses of benzene. **07**
- OR**
- Q.4** (a) Describe in detail the Chemistry of Polyethylene and Ethanol. **07**
- (b) What do you meant by Hetrocyclic compound. ? Discuss about any one Five member ring compound. **07**
- Q.5** (a) Differentiate between Glucose and Fructose. Write the Conversion of Aldose to Ketose. **07**
- (b) Explain the sulfonation and aminofication of Naphthalene. **07**
- OR**
- Q.5** (a) Write the preparation, properties and uses of Aromatic compound Phenol. **07**
- (b) Explain the reaction, mechanism and application of Perkin reaction. **07**
