

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (OLD) EXAMINATION – WINTER 2018****Subject Code:130501****Date:05/12/2018****Subject Name:Organic Chemistry And Unit Processes****Time:10:30 AM TO 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) Define the following terms: **07**  
(1) Octane number (2) Chromophore (3) Addition reaction (4) Asymmetric carbon (5) Polynuclear aromatic hydrocarbons (6) Heterocyclic compound (7) Polymers
- (b) Fill in the blanks: **07**
1. General formula of carboxylic acids is \_\_\_\_\_.
  2. The unit process in which  $-\text{SO}_3\text{H}$  group is introduced is called \_\_\_\_\_.
  3. Structural formula of primary alkyl halide is \_\_\_\_\_.
  4. The compounds which are converted to polyhydroxy aldehydes or polyhydroxy ketones on hydrolysis are called \_\_\_\_\_.
  5. In Wolff-Kishner reduction of aldehydes \_\_\_\_\_ is used as reducing agent.
  6. Soap is the sodium or potassium salts of higher \_\_\_\_\_.
  7. In Friedel-Crafts reaction of benzene \_\_\_\_\_ is used as a catalyst.
- Q.2** (a) Explain electrophilic addition reactions with their mechanism. **07**
- (b) Explain fractional distillation of crude oil. What are the various fractions obtained by the fractional distillation of petroleum? Give one use of each. **07**
- OR**
- (b) Write a note on modern theory of colour. **07**
- Q.3** (a) Give a brief account of the optical isomerism of Tartaric acid. **07**
- (b) Describe important chemical properties of alkyl halides. **07**
- OR**
- Q.3** (a) Give an account of manufacture processes of Acetic Acid. **07**
- (b) Describe chemical properties and uses of Ethanol. **07**
- Q.4** (a) Explain manufacturing process of sugar from cane in detail. **07**
- (b) What are synthetic detergents? How do they differ from soaps? **07**
- OR**
- Q.4** (a) Explain Cannizzaro Reaction with mechanism. **07**
- (b) Give an account of electrophilic substitution reactions of Naphthalene. **07**
- Q.5** (a) Give an account of different five membered and six membered heterocyclic compounds. **07**
- (b) Describe various electrophilic substitution reactions of Benzene. **07**
- OR**
- Q.5** (a) Write a note on polymer properties and structure. **07**
- (b) Give an account of different types of unit processes of organic chemistry. **07**

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