

Assignment I  
CHE-101  
Sem I 2017  
Unit Test I

## Unit-I

### Long Questions:

- 1) Discuss nitration of benzene
- 2) Discuss sulphonation of benzene
- 3) Discuss halogenation of benzene
- 4) Discuss f.c. alkylation of benzene
- 5) Discuss f.c. acylation of benzene
- 6) Discuss  $S_N^1$  reaction
- 7) Discuss  $S_N^2$  reaction
- 8) Discuss  $E_1$  reaction

### Short Questions:

- 1) Define following terms with examples
- 2) Electrophiles
- 3) Nucleophiles
- 4) Free radicals
- 5) Carbonium ion
- 6) Carbenion

## Unit-II

### Long Questions:

- Q-1. What is Actinide Series? Explain the electronic configuration of the Actinide Series.
- Q-2. Write a short note on Oxidation state of the Actinide Series elements.
- Q-3. What is Trans Uranium elements? Explain the importance of Uranium by Chain reaction.
- Q-4. What is Lanthanide Series? Explain the electronic configuration of the Lanthanide Series.
- Q-5. Write a short note on Ion-Exchange Method.

## Unit-III

### Long Questions:

- (1) Describe synthesis of alkane
- (2) Discuss halogenation of methane
- (3) Describe physical properties of alkene
- (4) Discuss preparation of alkene by elimination reaction

### Short Questions:

1. Define geometric isomers
2. Draw the structure of isobutene
3. What is vicinal dihalides
4. Which catalyst require for reduction of alcohol to alkane
5. Give the isomer of molecular formula  $C_4H_8$

### Unit-IV

#### Long Questions:

1. Derive an equation for the rate constant of a second order reaction in which initial concentration of both the reactants are equal ( $a = b$ )
2. For the first order reaction half life time is 100 seconds. What time will be required for 60% of the reaction to take place.
3. Derive an equation for the rate constant of a second order reaction in which initial concentration of both the reactants are not equal ( $a \neq b$ )
4. Explain Pseudo unimolecular reaction.

#### Short Questions:

1. Define : Order of reaction
2. Define : Molecularity
3. What is rate of reaction.