

B.Sc. (With Credits)-Regular-Semester 2012 Sem I
CHE102 - Chemistry-II : Paper-II (Organic Chemistry)

P. Pages : 2

Time : Three Hours



GUG/W/16/3303

Max. Marks : 50

- Notes : 1. All **five** questions are compulsory and carry equal marks.
2. Write chemical reaction and draw diagram wherever necessary.

1. a) Explain : i) Inductive effect. ii) Electrometric effect. **5**
b) Explain generation, stability and reactions of free radicals. **5**

OR

- c) Explain Rearrangement reaction with examples. **2½**
d) Write about Electrophiles and nucleophiles. **2½**
e) Explain bond angle with examples. **2½**
f) Explain the formation of ethane molecule. **2½**
2. a) Explain conformation in butane with energy profile diagram. **5**
b) What is optical Isomerism? Explain optical isomerism of Tartaric acid. **5**

OR

- c) Write a note on asymmetric synthesis. **2½**
d) Define : 1) Enantiomerism. 2) Racemisation. **2½**
e) Explain chemical method of resolution of isomers. **2½**
f) Write about geometrical isomerism of maleic and fumaric acid. **2½**
3. a) What are cycloalkane? Give methods of preparation of cycloalkane by **5**
 i) Freund's reaction. ii) Dickmann reaction.
b) What is Markownikoff's rule? Explain the ionic mechanism of addition of HBr to propylene molecule. **5**

OR

- c) Explain Baeyers strain theory. **2½**
d) Write Diels-Alder reaction. **2½**
e) Define : i) Octane number. ii) LPG. **2½**
f) Write a note on hydroboration. **2½**

4. a) Explain Orientation. Describe the directive influence of – CH₃ group on electrophilic aromatic substitution reaction. 5
- b) Explain the molecular orbital diagram of benzene and draw the structure. 5

OR

- c) Explain Huckels Rule of aromaticity. 2½
- d) Explain side chain Halogenation reaction. 2½
- e) Write Birch reduction. 2½
- f) Explain meta-directing influence of – NO₂ group in benzene toward aromatic electrophilic substitution reaction. 2½
5. **Any ten.** 10

- i) Define bond length.
- ii) Draw m. o. diagram of acetylene.
- iii) Define substitution reaction.
- iv) Give one example of functional isomerism.
- v) Define chirality.
- vi) Define specific rotation.
- vii) What is peroxide effect.
- viii) Give classification of diene.
- ix) Define cracking.
- x) What are activating groups?
- xi) Complete reaction.


