

AE-757

M.Sc. (Previous)
Term End Examination, 2016-17

CHEMISTRY

Paper - II

Organic Chemistry

Time : Three Hours] [Maximum Marks : 100
[Minimum Pass Marks : 36

Note : Answer any **five** questions. The figures in the right-hand margin indicate marks.

1. Write notes on the following : 5×4
- (a) Delocalised chemical bonding
- (b) Resonance
- (c) Bonding in fullerenes
- (d) Tautomerism
2. (a) Give the methods of resolution of optical isomers. 10

(2)

- (b) Write a note on stereochemistry of compounds containing Nitrogen. 10
3. (a) Give an account for types of mechanisms. 10
- (b) Write notes on the following : 5×2
- (i) Hamond's Postulates
- (ii) Curtin-Hammett Principle
4. Write short notes on the following : 5×4
- (a) Carbocation
- (b) Carbenes
- (iii) Free radicals
- (iv) Benzyne
5. (a) Give the effect of substrate and effect of leaving group on the reactivity of Electrophilic substitution reactions. 10
- (b) Write notes on the following : 5×2
- (i) Ortho-Para ratio
- (ii) Ipso attack
6. Write notes on the following : 5×4
- (a) S_N2 mechanism
- (b) SET mechanism

(3)

(c) Neighbouring group mechanism

(d) S_Ni mechanism

7. Write notes on the following : 5×4

(a) Allylic halogenation (NBS)

(b) Oxidation of aldehydes

(c) Coupling of Alkynes

(d) Sandmeyer reaction

8. Give the mechanism of following reactions : 5×4

(a) Knoevenagel reaction

(b) Mannich reaction

(c) Benzoin condensation

(d) Perkin reaction

9. (a) Give the general mechanistic approach to molecular rearrangement reactions. 10

(b) Write notes on the following : 5×2

(i) Michael addition

(ii) Sommelet rearrangement

10. (a) Give the classification of pericyclic reactions. 10

(4)

(b) Write notes on the following : 5×2

(i) Cope and aza-cope rearrangement

(ii) Fluxional tautomerism
