

- (b) Draw and explain the Fischer, Newmann and Sawhorse projection formulae and their interconversion of 3-bromo-2-butanol.
9. (a) (i) Discuss the nucleophilic substitution on allylic and vinylic carbon. (5 + 5)
- (ii) What are the factors affecting aliphatic nucleophilic substitution reactions?

Or

- (b) Discuss the following condensation reactions : (5 + 5)
- (i) Claisen and
- (ii) Dieckmann.
10. (a) Elucidate the structure of isoflavones.

Or

- (b) Explain the structural elucidation of purines.
- \_\_\_\_\_

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08PCH01/08POC01/  
08PAC01

(For the candidates admitted from 2008–2009 onwards)

M.Sc. DEGREE EXAMINATION, APRIL/MAY 2018.

First Semester

Chemistry

ORGANIC CHEMISTRY – I  
ORGANIC CHEMISTRY, ANALYTICAL  
CHEMISTRY

Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Write any one example for the following reactions :
- (i) Elimination
- (ii) Oxidation.

Or

- (b) Write notes on homolytic and heterolytic mechanisms.

2. (a) Discuss the Hammett equation and free energy relationship.

Or

- (b) Distinguish between transition states and intermediates.

3. (a) Describe the optical activity of biphenyls, allenes and spiranes.

Or

- (b) Explain stereospecific and stereoselective synthesis with examples.

4. (a) Describe the mechanism of  $S_N1$  reaction with an example.

Or

- (b) Discuss the neighbouring group participation by  $\sigma$  bonds.

5. (a) Describe the synthesis of imidazole.

Or

- (b) Explain the synthesis of Pyrimidines.

PART B — (5 × 10 = 50 marks)

Answer ALL questions.

6. (a) Describe the structure, stability and formation of carbonium ions and free radicals. (5 + 5)

Or

- (b) Discuss the following reactions : (5 + 5)

(i) Gomberg-Bachmann

(ii) Ulmann.

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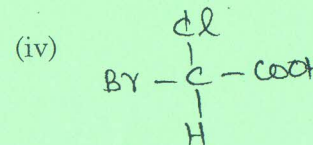
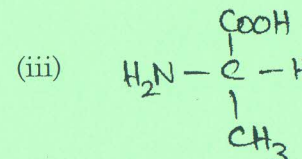
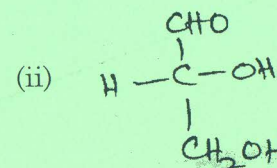
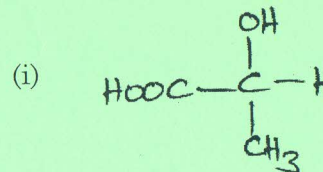
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7. (a) Explain the kinetic and thermodynamic controlled reactions.

Or

- (b) Give an account on the Hammond postulates and isotopic labeling effects.

8. (a) Assign R or S configuration to each of the following compounds :



Or

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