

FACULTY OF PHARMACY

**M. Pharmacy (Pharmaceutical Chemistry) I-Semester (PCI) (Supple.) Examination,
August 2018**

Subject: Advanced Organic Chemistry - I

Time: 3 Hrs

Max. Marks: 75

Note: Answer any five questions. All questions carry equal marks.

- 1 (a) Explain the structure and stability of carbocations and carbanions.
(b) Discuss SN^1 and SN^2 reactions with mechanism and stereochemistry. (7+8)
- 2 (a) What is retrosynthesis? Discuss C – C disconnections in alcohols and carbonyls compounds having 1, 2, - 1, 3, - 1, 4, - and 1, 5 – difunctionalized groups.
(b) Explain the terms (i) Synthons (ii) Synthetic agent (iii) FGI (iv) FGA with suitable examples. (9+6)
- 3 Discuss the mechanism and synthetic applications of any three of the following named reactions.
(a) Ullmann coupling reaction
(b) Sandmeyer reaction
(c) Baeyer – Villiger oxidation
(d) Michael addition
(e) Doebner – Miller reaction (3x5)
- 4 (a) Explain the role of protecting groups in organic synthesis.
(b) Explain how hydroxyl group, 1, 2, diols and carbonyl groups are protected during the reactions.
(c) Explain mechanism and applications of
(i) Aluminium isopropoxide
(ii) Diazomethane (5+5+5)
- 5 (a) Mention the heterocycle present and also outline the steps involved in the synthesis of any three of the following drugs: (3x3)
(i) Ketoconazole
(ii) Celecoxib
(iii) Chlorpromazine
(iv) Sulfamerazine
(v) Alprololam
(b) Explain C – C and C – N rearrangement reactions. Give one example for each. (6)
- 6 Write notes on any three of the following: (5x3)
(a) Hoffman and Saytzeff's rule
(b) Ozonolysis
(c) Traube purine synthesis
(d) Combes quinoline synthesis
(e) BOP reagent