Code No. 1161/PCI

FACULTY OF PHARMACY

M. Pharmacy (Pharmaceutical Chemistry) I-Semester (PCI) (Main) Examination, February 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 SN^1 and SN^2 reactions in aliphatic compnds with their mechanism and stereochemistry.
(b) Explain how the following factors will affect the reactivity in nucleophilic substitution reactions?
(i) Substrate structure (ii) Solvent
(iii) leaving grp (iv) attacking nucleophile (8+7)

2 (a) Give a method of preparation, mechanism and applications of
(i) N-bromosuccinamide (ii) Diazomethane (iii) DCC (3x3)
(b) Discuss the stability of carbocations. (6)

3 Discuss the mechanism and synthetic applications of any three of the following named reactions.
(a) Ugi reaction
(b) Dieckmann reaction
(c) Sandmeyer reaction
(d) Michael addition
(e) Baeyer-villiger oxidation

4 (a) Explain the role of protecting grps in organic synthesis. Explain how carbonyl, carboxyl and amino grps are protected during the synthesis?
(b) Mention the heterocyclic nucleus present and also the steps involved in the synthesis of
(i) Antipyrin (ii) Chlorpromazine (7+8)

5 (a) Explain the following terms with one example each.
(i) Retrosynthesis
(ii) Functional grp in terconversion
(iii) Functional grp addition
(iv) Synthon and synthetic reagent
(b) Discuss C – X disconnections and C – C disconnections of 1,2-, 1, 3 -, 1, 4- and 1, 5 – difunctionalized compnds belonging to alcohols and carbonyl compnds. (8+7)

6 (a) Explain E_1 and E_2 elimination reactions with their mechanism and stereochemistry.
(b) Discuss Saytzeff and Hoffman rules. (9+6)

7 (a) Explain the structure, stability and important reactions of carbanions.
(b) Discuss mechanism and synthetic applications of following agents:
(i) Aliminium isopropoxide
(ii) Wittig reagent (8+7)

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