



M-014-003406

Seat No. _____

M. P. M. (Sem. IV) (CBCS) Examination

May / June - 2018

BP404 : Pharmaceutical Chemistry – VI

(Organic Chemistry – II) (Old Syllabus)

Faculty Code : 014

Subject Code : 003406

Time : 3 Hours]

[Total Marks : 80

- Instructions :** (1) Attempt three questions from each section.
(2) Questions 1 and 5 are compulsory.
(3) Figure to the right indicates full marks for the respective question.

SECTION - I

- 1** Justify the following statements : (Any Seven) **14**
- (1) Pyridine undergoes nucleophilic substitution at 3-position.
 - (2) Aliphatic amines are more basic than Pyridine.
 - (3) Aldol condensation is acid catalyzed reaction.
 - (4) Thiophene is more aromatic than pyrrole.
 - (5) Spiran do not contain any chiral carbon though it is optically active.
 - (6) Aniline is less basic than ethyl amine.
 - (7) Presence of $-\text{NO}_2$ group at 2nd and 4th position of phenol increases its acidity.
 - (8) Furan, thiophene and pyrrole show electrophilic substitution reaction at 2nd and 5th position most prominently.
 - (9) Non-polar solvents are used in microwave synthesis.
 - (10) Chloroacetic acid is more acid than acetic acid.

- 2 (1) Give the reaction and mechanism of phenol which involve carbene formation as intermediate. 7
 (2) Explain aldol condensation. Give two methods of preparation and reactions of any two carboxylic acid derivatives. 6
- 3 (1) Give structure of the following : 7
 (a) Pyrimidine; (b) Indole; (c) Quinoline;
 (d) Pyrazine; (e) Thiazole; (f) Pyridazine; (g) Imidazole
 (2) Explain Hofmann degradation of amides. 6
- 4 (1) Describe in detail about Nucleophilic aromatic substitution reaction with suitable examples. 7
 (2) Enlist different methods of resolution of racemic modifications and explain any one method in detail. 6

SECTION - II

- 5 Answer the following questions : (Any Two) 14
 (1) Differentiate Enantiomers and diastereomers.
 (2) Give three method of preparation and reactions of carboxylic acid.
 (3) What are α , β -unsaturated carbonyl compounds? Write a short note on Michael addition reaction.
- 6 (1) Write a note on fries rearrangement and Clemmensen reduction. 7
 (2) Describe the mechanism of Hantzsch pyridine synthesis and Skraup Quinoline synthesis. 6
- 7 (1) Draw the conformational isomer of cyclohexane and comment on its stability. 7
 (2) Explain cannizaro and cross cannizaro reaction with examples. 6
- 8 Answer the following :
 (1) What is diazonium salt? Give its preparation and applications. 7
 (2) Give the principles and application of green chemistry. 6