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### Code: 15R00303

B.Pharm II Year I Semester (R15) Regular & Supplementary Examinations November 2017 **PHARMACEUTICAL ORGANIC CHEMISTRY - III** 

Time: 3 hours

Max. Marks: 70

## PART – A

(Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
  - (a) Write the structure of the following heterocyclics with numbering.
    - (i) Acridine. (ii) Purine. (iii) Isoxazole. (iv) Pyrazole.
  - (b) Define the term "chiral". Give examples of chiral and achiral substances.
  - (c) Write the structure of 'Glucosazone'.
  - (d) Explain the meaning of 'Zwitterion'.
  - (e) What is the composition of fat? How it differs from wax?
  - (f) Give examples for aldose, ketose and pentose sugars.
  - (g) Explain 'centre of symmetry'.
  - (h) What is racemic mixture? Give example.
  - (i) What is 'Neighbouring group effect'?
  - (j) Explain why thiophene is more aromatic than furan and pyrrole.

#### PART – B

(Answer all five units, 5 X 10 = 50 Marks)

## UNIT – I

- 2 (a) Discuss the aromatic character of furan, pyrrole and thiophene.
  - (b) Outline the synthesis (any one method) of the following:(i) Benzimidazole. (ii) Isoquinoline.
  - (c) Give examples of drugs (two each) and structure of one medicinal agent containing the following ring systems: (i) Pyrazine. (ii) Imidazole.

#### OR

- 3 (a) What are the characteristic reactions does pyrrole undergo and why? Explain why electrophilic substitution on pyrrole takes place at 2<sup>nd</sup> position in preference to 3<sup>rd</sup> position.
  - (b) Write a note on Skraup synthesis of quinoline.
  - (c) Give examples of drugs (two each) and structure of one drug containing the following ring system:(i) Indole. (ii) Phenothiazine.

# UNIT – II

- 4 (a) Explain the sequence rules (Cahn & Ingold) with suitable examples to assign R and S configuration to optically active molecules.
  - (b) What is geometric isomerism? Explain how *cis/trans* isomerism is different from concept of E/Z.

#### OR

- 5 (a) Write the main characteristics of pericyclic reactions and principal categories. Explain cycloaddition reaction.
  - (b) Write notes on the following: (i) Absolute and relative configuration. (ii) Meso compound.

Contd. in page 2



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## UNIT – III

- (a) Write a note on establishment of ring structure and ring size for glucose. 6
  - (b) What are glycosides? Give their classification and write a brief note on anthraquinone glycosides.

OR

- (a) Write the structure of sucrose and explain why it is non-reducing. 7
  - (b) Write note on the following: (i) Mutarotation. (ii) Epimerization. (iii) Glycosidic linkage.

## UNIT – IV

- 8 (a) Give the classification of proteins and explain the method of identification of N-terminal amino acid residue of a peptide.
  - (b) Discuss the chemistry of insulin.

OR

- 9 Write a short note on the following:
  - (a) Synthesis of peptides.
  - (b) Isoelectric point.
  - Rancidity of oils and fats. (c)

# UNIT – V

- (a) Write the mechanism of Mannich reaction and outline its applications in drug synthesis. 10
  - (b) Explain the mechanism Curtius rearrangement.
    - OR
- (a) Write a detailed account on Beckmann rearrangement. 11
  - www.firstRanker.com (b) Write a note on reduction by transition metal complexes.