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**B. Pharmacy 3rd Semester Examination**

**Pharmaceutical Chemistry-IV (Organic Chemistry-II) (O.S.)**

**HBP-203**

**Time : 3 Hours**

**Max. Marks : 80**

*The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.*

**Note :** Attempt any one question from sections A, B, C and D.  
Answer to Section E (question 9) is compulsory.

**SECTION - A**

1. Define and classify  $\alpha$ ,  $\beta$ -unsaturated carbonyl compounds. Discuss their preparation using Perkin reaction, aldol condensation, Knoevenagel reaction and Reformatsky reaction along with their reaction mechanism. **(16)**
2. Discuss the [2+2] and [4+2]-Cycloaddition reactions using Frontier Molecular Orbital approach. Add a note on stereochemistry of Diels Alder reaction. **(16)**

**SECTION - B**

- 3 (a) Discuss in detail about the neighboring group effect with suitable example and mechanism. **(10)**  
(b) New organic reagents in drug synthesis **(6)**.
4. Discuss in detail about stereoselective and stereospecific reactions. **(16)**

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**[P.T.O.]**

**SECTION - C**

5. Discuss the following name reactions involved in the synthesis of heterocyclic compounds with their reaction mechanism.
- (a) Knorr Pyrrole synthesis.
  - (b) Hantzsch pyridine synthesis.
  - (c) Skarup quinoline synthesis.
  - (d) Fischer indole synthesis. **(16)**
6. Compare the chemical reactions pyrrole, furan and thiophene. **(16)**

**SECTION - D**

7. Write notes on:
- (a) Discuss the structure of glucose.
  - (b) Discuss chemical reactions of fatty acids. **(16)**
8. Write notes on:
- (a) Discuss the color reactions used for the identification of proteins.
  - (b) Discuss the structure of deoxyribo nucleic acid (DNA). **(16)**

**SECTION - E**

9. Write notes on:
- (a) Symmetry allowed and symmetry forbidden process.
  - (b) Wilkinson catalyst.
  - (c) Determination of iodine value.
  - (d) Compare the basicity of pyridine with imidazole and pyrazole. **(4×4=16)**