

16360(D) - 0 DEC 2016

**B. Pharmacy 1st Semester Examination**

**Pharmaceutical Organic Chemistry (NS)**

**BP-112**

**Time : 3 Hours**

**Max. Marks : 70**

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

**SECTION - A**

*Attempt any two questions.*

1. Describe the effects of a group on orientation and relative reactivity of Benzene.
2. Explain acetoacetic ester synthesis of ketones or malonic ester synthesis of carboxylic acids.
3. Discuss in detail the thermal and photochemical reactions of 1, 3-butadiene and 1,3,5-hexatriene. (2×10=20)

**SECTION - B**

*Attempt any eight questions.*

4. Write down the details of conformations of cycloalkanes.
5. Give reason for acidity of carboxylic acids and phenols.
6. How will you synthesize alcohols by Grignard reagent? Discuss.
7. Describe various theories of acids and bases.
8. Discuss synthetic methods and reactions of nitrenes.
9. Explain mechanism and applications of Cannizzaro reaction and Williamson synthesis.

10. Differentiate the following:

- (a) Aliphatic and aromatic amines.
- (b) Phenols and alcohols.

11. State the following rules and give suitable examples:

- (a) Markovnikov's rule.
- (b) Saytzeff's rule.

12. Comment on the stability of benzyl radical and benzyl cation.

13. Describe mechanism and facts observed in support of elimination-addition mechanism for nucleophilic aromatic substitution of aryl halides. (5×8=40)

**SECTION - C**

*All the questions are compulsory.*

14. What are applications of Hofmann rearrangement?
15. Outline preparation of phenanthrene by Haworth synthesis.
16.  $\text{NF}_3$  has dipole moment lower than  $\text{NH}_3$  inspite of possessing highly polar N-F bonds. Why?
17. Water boils 160 degrees higher than  $\text{H}_2\text{S}$ . Justify.
18. What is Molecular Orbital Theory? (5×2=10)