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**B.PHARM**  
**(SEM-II) THEORY EXAMINATION 2018-19**  
**PHARMACEUTICAL CHEMISTRY-II (ORGANIC PHARMACEUTICAL CHEMISTRY)**

*Time: 3 Hours**Total Marks: 70*

Note: Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A****1. Attempt all questions in brief.****2 x 7 = 14**

- a) What are aliphatic organic compounds?
- b) Give the chemical structure of: But-2-yne and 1, 3-cyclohexidine.
- c) Complete the reaction  
 $\text{CH}_3\text{CH}=\text{CH}_2 + \text{HOCl} \rightarrow$
- d) How many sigma and pi bonds are there in ethylene molecule?
- e) What happens when benzene is treated with methyl chloride in the presence of aluminium chloride?
- f) Define aromaticity.
- g) What is a Mannich base?
- h) What is aldol condensation?
- i) What happens when aniline is treated with sodium nitrite and hydrochloric acid at 0<sup>0</sup>-5<sup>0</sup>C
- j) What is Saytzeff rule?

**SECTION B****2. Attempt any three of the following:****7 x 3 = 21**

- a) What is stereochemistry? Classify the geometrical and optical isomerism with their suitable examples.
- b) Write down the method of preparation, reaction and properties of alkenes.
- c) What are the aromatic compounds? Explain the aromatic character of benzene.
- d) Give the reaction mechanism and synthetic application of Meerwein-Ponndorf-Verly (MPV) reduction.
- e) Write a detail note on aryl diazonium salts with their synthetic importance.

**SECTION C****3. Attempt any two parts of the following:****3.5 x 2 = 7**

- a) Write in detail about inductive effect with suitable examples.
- b) What are the free radicals? Explain chlorination method of alkane with free radical mechanism.
- c) Write an exhaustive note on hyperconjugation.

**4. Attempt any two parts of the following:****3.5 x 2 = 7**

- a) Explain SN1 and SN2 reaction with suitable examples.

BOP121

- b) How will you differentiate between primary, secondary and tertiary alcohols?
- c) Write the chemical properties of aldehydes.

5. Attempt any *two* parts of the following: 3.5 x 2 = 7

- a) How will you synthesize picric acid from phenol?
- b) Discuss the substitution reaction in aryl halides.
- c) Give the method of preparation of anthracene.

6. Attempt any *one* of the following: 3.5 x 2 = 7

- a) What is Hofmann rearrangement? Give their mechanism and synthetic importance.
- b) What is Oppeneaur oxidation? Write their mechanism and synthetic importance.

7. Attempt any *two* parts of the following: 3.5 x 2 = 7

- a) Give the method of preparation and chemical reactions of Grignard reagent.
- b) Exemplify compounds containing *active methylene group* with their synthetic importance.
- c) What is the importance of  $\alpha$ ,  $\beta$  unsaturated carbonyl compounds in organic synthesis.