



**International Islamic University Chittagong**  
**Department of Pharmacy**

B. Pharm (Hon's) Program

Final Examination

Spring Semester 2019

Course Code: Pharm-1201

Course Title: **Organic Pharmacy**

Time: 2 hours 30 minutes

Full Marks: 50

*(Answer of separate groups should be given in separate scripts. Figures on right margin indicate marks)*

**Group A**      *(Answer any two questions from the followings)*      **Marks: 20**

- |    |  |     |
|----|--|-----|
| 1. | a) Define aromaticity. What is Heckles rule?   | 1+2 |
|    | b) Write down nine substituted compounds of benzene with structural formula.           | 3   |
|    | c) Mention the resonance behavior of benzene.  | 2   |
|    | d) Deduce the commercial applications of benzene.                                      | 2   |
| 2. | a) Show the five reactive part of carboxylic acid with reactions.                      | 1×5 |
|    | b) What are the reactive parts of carboxylic acid? Mention each reaction with example. | 3   |
|    | c) Deduce the pharmaceutical applications of carboxylic acid.                          | 2   |
| 3. | a) Discuss the mechanism of electrophilic and substitution reaction.                   | 3   |
|    | b) Mention the physical and chemical properties of amine.                              | 3   |
|    | c) Compare between carbonium and carbanions.   | 2   |
|    | d) Define hyperconjugative and mesomeric effects.                                      | 2   |

**Group B**      *(Answer any three questions from the followings)*      **Marks: 30**

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|----|---|---------------|
| 4. | a) Design the cleansing mechanism of soap.  | 4             |
|    | b) Construct your idea about saponification number and iodine number of lipids.     | 3             |
|    | c) Compare between fats, oils and waxes.  | 3             |
| 5. | a) Define carbohydrates. Write down the major groups of carbohydrate with examples. | 6             |
|    | b) Mention the synthesis of peptides with stepwise reactions.                       | 4             |
| 6. | a) Describe the classification of amino acids with examples.                        | 3             |
|    | b) Write down the Gabriel synthesis of amino acids.                                 | 3             |
|    | c) Enumerate the identification test for protein.                                   | 4             |
| 7. | a) Give the biosynthetic pathway of sucrose.  | 2             |
|    | b) Mention the pharmaceutical uses of the following:                                | 2×4           |
|    | i. Sucrose  | ii. Starch    |
|    | iii. Liquid glucose   | iv. Cellulose |