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Roll No.....

Total No. of Unit : 04
Total No. of Printed Pages : 03

Code No. : 01/202

First Semester Examination, Dec. 2018

M.Sc. CHEMISTRY

Paper - II

ORGANIC REACTION MECHANISM

Time : 3 Hrs. **Max. Marks : 80**

- Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.
  Part C (Short answer type) of each question will be answered in 200-250 words.
  Part D (Long answer type) of each question should be answered within the word limit 400-450.

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Unit - I

Q.1 A. What is isotopic effect? **(2)**

Q.1 B. Define Resonance effect. **(2)**

Q.1 C. Explain Hammond's postulate with suitable examples. **(4)**

OR

Explain Curtin-Hammett principle with suitable examples.

Q.1 D. Explain mechanism reaction with example. **(12)**

OR

Describe the Hammett equation and linear free energy relationship substituent and reaction constants.

P.T.O.

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Unit - II

Q.2 A. Define the neighbouring group participation. **(2)**

Q.2 B. What are phenonium ions? **(2)**

Q.2 C. Explain the classical and non-classical norbornyl system. **(4)**

OR

Explain nucleophilic subsitution at an aliphatic trigonal carbon.

Q.2 D. Explain the reactivity effect of substrate structure and attacking nucleophile with example. **(12)**

OR

Explain the neighbouring group participation by and bonds with examples.

Unit - III

Q.3 A. What do you mean by bimolecular mechanism? **(2)**

Q.3 B. What are diazonium compounds? **(2)**

Q.3 C. Give Vilsmeir reaction with example. **(4)**

OR

Explain the electrophilic subsitution accompanied by double bond shifts.

Q.3 D. Differentiate between , and mechanism with suitable examples. **(12)**

OR

Explain the effect of substrate, leaving group and solvent polarity on the reactivity.

Unit - IV

Q.4 A. Give names of two compounds having carbon-hetero multiple bonds. **(2)**

Q.4 B. What is a Grignard reagent? **(2)**

Q.4 C. Explain Claisen condensation with example. **(4)**

OR

Explain the mechanism of hydrogenation of aromatic rings.

Q.4 D. Describe metal hydride reduction of compound with their mechanism and example. **(12)**

OR

Explain the addition of organozinc and organolithium reagents to carbonyl compounds.

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