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Reg. No.

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II Semester M.Sc. Degree Examination, November - 2022

CHEMISTRY

Organic Chemistry - II

(CBCS 2019-20 Onwards Scheme)

Paper : Ch - 202

Time : 3 Hours

Maximum Marks : 70

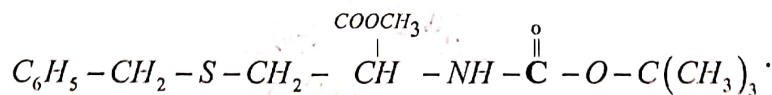
**Instructions to Candidates:**

Answer question No.1 and any Five of the remaining.

Answer any Ten of the following.

(10×2=20)

1. a) Discuss the ipso attack in aromatic nitration. Give an example.
- b) How sulphonation differs from other aromatic electrophilic substitutions? Explain with suitable example.
- c) Illustrate the mechanism of Bucherer reaction.
- d) Outline the conversion of aldehydes into nitriles? Propose mechanism.
- e) Describe the Ene-reaction.
- f) What is a regioselective reaction? Give suitable example.
- g) Formulate Chugaev reaction with suitable example.
- h) Sketch Neber rearrangement citing suitable example.
- i) Discuss dienone-phenol rearrangement with proper example.
- j) Explain peptidomimetics with suitable examples.
- k) Propose a way to activate carboxyl group using DCC.
- l) How do you deprotect the following?



2. a) Discuss the importance of energy profile diagrams. (4+6)
- b) Citing appropriate examples, describe the following reactions:
  - i) Vilsmeier-Haack reaction.

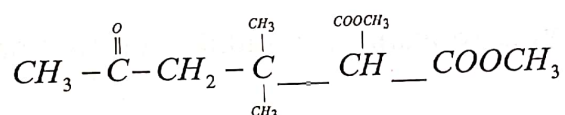
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ii) Hoesch reaction.

3. a) Sketch the use of lithium aluminium hydride and sodium borohydride reduction of unsaturated carbonyl compounds and esters. (4+6)
- b) Mention briefly on the addition of Grignard reagent and organolithium reagent to saturated and unsaturated carbonyl compounds citing two examples for each organometallic reagent.
4. a) Write an account of effect of substrate structure and leaving group on the  $S_NAr$  mechanism.
- b) Discuss ortho/para ratios in aromatic electrophilic substitution reactions using suitable examples.
- c) Give a note on Sommelet-Hauser rearrangement. (4+3+3)
5. a) Illustrate Mannich reaction, with appropriate examples.
- b) Indicate the appropriate reactants for the following Michael adduct:



- c) Describe E2C and E2H Mechanism. (4+3+3)
6. a) Write an account on the effect of attacking base and leaving group on E1 and E2 reactions.
- b) Give a Comparative account of Hofmann, Curtius and Lossen rearrangements.
- c) Illustrate Baker-Venkataraman rearrangement with suitable examples. (4+3+3)
7. a) Outline the mechanism of Benzidine rearrangement.
- b) Discuss the determination of amino acid sequence by Edman's methods.
- c) Formulate the solid phase peptide synthesis of Met-Enkephalin. (4+3+3)
8. a) Sketch the Solution Phase synthesis of oxytocin.
- b) Suggest a method each to protect the N-terminus and C-terminus of amino acids.
- c) Give one method each for the deprotection of the following: (4+3+3)
- i) Z -
- ii) Fmoc -
- iii) Boc -

