Reg.No : | | | | | | | | | | | |

D. K. M. COLLEGE FOR WOMEN (AUTONOMOUS), VELLORE-1

SEMESTER EXAMINATIONS

JUNE - 2022 **21CPCH2B**

ORGANIC REACTION MECHANISMS AND REARRANGEMENTS

Time: 3 Hours **Max. Marks: 75**

SECTION – A (5 x 6 = 30)

Answer ALL the questions.

1. (a) Write the electrophilic addition reactions to carbon-carbon double and triple bonds.

(Or)

(b) Explain the hydrogenation and hydroboration reaction of carbon-carbon double bonds.

2. (a) Write the reactions of following.

(i) Mannich reaction (ii) Stobbe reaction

(Or)

(b) Explain about Knovenagel condensation reaction.

3. (a) Write the following reactions with mechanism.

(i) E1 elimination (ii) E1cb elimination.

(Or)

(b) Write the mechanism of pyrolytic elimination with examples.

4. (a) Explain the reaction and mechanism of Baeyer-Villiger rearrangements.

(Or)

(b) Discuss the Dieckmann cyclization reaction.

5. (a) Write the oxidation reactions of PCC and PDC.

(Or)

(b) Write the reduction reactions of $NaBH_4$ and DIBAL-H.

SECTION – B (3 x 15 = 45)

Answer any THREE of the following questions

6. (a) Explain the reactions of Michael addition and Robinson annulation. (5)
   (b) Write the reactions of hydroxylation of olefinic double bonds using OsO_4. (5)
   (c) Explain the reactions of sharpless epoxidation. (5)

7. (a) Discuss the reactions of Wittig and Wittig-Horner olefination. (8)
   (b) Explain Julia olefination. (7)

8. (a) Write the reactions and mechanism of E2 and Ei eliminations. (7)
   (b) Explain the reactions of Saytzeff and Hoffmann elimination. (8)

9. Explain the following reactions with mechanism.
   (i) Wagner – Meerwin rearrangement. (5)
   (ii) Favorski rearrangement. (5)
   (iii) Wolf rearrangement. (5)

10. (a) State and explain the oxidation reaction of LTA and DDQ. (10)
    (b) Explain the MPV reduction. (5)

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