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) 102127 (Pages : 2) Name.....

Reg. No.....

SECOND SEMESTER M.Sc. DEGREE (REGULAR/SUPPLEMENTARY) EXAMINATION, APRIL 2024

(CBCSS)

Chemistry

CHE2C07—REACTION MECHANISM IN ORGANIC CHEMISTRY

(2019 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

Section A

Answer any **eight** *questions.*

Each question carries a weightage of 1.

1. Discuss the mechanism of S_N2 reaction.
2. What is Hoffmann rule ? Discuss the elimination reaction of 2-aminopentane based on the rule.
3. What is Wittig reaction ? How phosphorous ylides are prepared ?
4. Write down the mechanism of Reformatsky reaction Mannich.
5. Discuss the Dewar- Zimmerman approach of pericyclic reactions.
6. Discuss the Woodward- Hoffmann selection rules for electrocyclic reactions.
7. Discuss the mechanism of Barton reaction.
8. What is Paterno - Buchi reaction ? Give its mechanism.
9. Discuss the structures of atropine and quinine.
10. Discuss the method of isolation of terpinoids.

(8 × 1 = 8 weightage)

Turn over

Section B

Answer any **six** *questions.*

Each question carries a weightage of 2.

11. Briefly explain the substituent effect on reactivity in mono and disubstituted benzene ring
12. Briefly explain the general methods of formation, geometry, stability, and reactions of carbe
13. With suitable examples, distinguish between E1 and E2 mechanisms.
14. Discuss the reactions of organozinc reagents with carbonyl compounds
15. What is Cope rearrangement ? Discuss its mechanism and stereochemistry.
16. What are the products obtained in the photo cyclo addition reactions of ketones ? Discuss mechanisms.
17. Explain the total synthesis of Longifolene.
18. Briefly explain the Woodward synthesis of cholesterol.

(6 × 2 = 12 weigh

Section C

Answer any **two** *questions.*

Each question carries a weightage of 5.

19 Explain the effect of substrate structure, leaving group and reaction medium on S_E1 reactio

20 Explain the reaction mechanism and applications of : (i) Aldol condensation ; (ii) Ben condensation.

21 What are pericyclic reactions ? What are their characteristics ? With suitable examples, exp electrocyclic and cycloaddition reactions.

22 With suitable example, explain photochemistry of Norrish Type I cleavages.

(2 × 5 = 10 weight