



EEN-301002

Seat No. _____

M. Sc. (Sem. I) : Examination

February-2022

MSC0C102 : Organic Chemistry

Time : 3 Hours]

[Total Marks : 70

- Instructions :** (1) All questions are compulsory
(2) Figures to Right indicate full marks.

1 Answer the followings :

- (A) (i) Discuss E1 reaction with supporting evidence. 4
(ii) Compare E1, E2, E1cb pathways. 3

OR

- (i) Compare SN¹ and SN² reaction with suitable example. 4
(ii) Explain Hoffmann & satzaff's rule of elimination with evidence. 3
(B) (i) Explain how erythro1, 2 dibromo 1, 2 diphenyle ethane yields cis product through E2 reaction. 4
(ii) Discuss SET mechanism with suitable example. 3

OR

- (B) Discuss the stereochemistry of the product obtained by the reaction of 2 bromo propionate on separated with dilute alkali solution, strong alkali solution. 4+3

2 Answer the followings.

- (A) (i) What is azulene ? How can NMR spectra & bond length criteria be used to check aromaticity ? 4
(ii) What is Huckels rule of aromaticity & define aromaticity give one example of nonaromaticity & anti aromaticity. 3

OR

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[Contd...

- (i) Prepare Homo diagram for benzene & cyclobutadiene using frost circle method. Character. 4
- (ii) Explain Ring current & Aromaticity. 3
- (B) (i) Give Hammett equation explain the terms involved in it. 7

OR

- (i) Comments on the acidity of C-H bond in a Haloform 3
- (ii) What is diatropic current ? Discuss role in determining aromaticity ? 4

3 Answer the followings.

- (A) (i) Discuss the three different reaction in which carbanion is a reactive intermediate. 7

OR

- (i) What are nitrenes ? Give three methods for generation of nitrenes. 7
- (B) (i) Discuss the mechanism and application of farorski rearrangement. 7

OR

- (i) Give introduction mechanism & four application for rearrangement of Wagner meerwein rearrangement. 7

4 Answer the followings.

- (A) (i) Explain : 7
 - (a) optical isomerism
 - (b) chiral center & chirality

OR

- (i) Explain the term of prochira I centre, axis & plane. 7
- (ii) Discuss the stereochemistry in addition to alkene. 7

OR

- (ii) Explain the enantiotopic & diastereotopic atoms. 7

5 Answer the followings.

- (1) Write principle of Schmidt reaction.
- (2) Write principle lossen rearrangement.
- (3) What are carbocation ?
- (4) What is wangerner Meerwin rearrangement.
- (5) Give principle of Favorsiki rearrangement.
- (6) What is nitrene ?
- (7) What is prochiral carbon ?
- (8) What are carbenes ?
- (9) Give example of SN1 & SN2 reaction.
- (10) What is inductive effect ?
- (11) What are neighbouring group effects ?
- (12) $\text{RCOR1} \xrightarrow{\text{HN}_3\text{Hcl}}$ product A.
- (13) What is Pinacol Pinacolone rearrangement ?
- (14) Give resonance structure of Guanidine.