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**DHANALAKSHMI SRINIVASAN COLLEGE
OF ARTS & SCIENCE FOR WOMEN
(AUTONOMOUS)**

(For Candidates admitted from 2020-2021 onwards)

PG DEGREE EXAMINATIONS APRIL - 2021

M.Sc., - CHEMISTRY

ORGANIC CHEMISTRY-II



Time: 3 Hrs

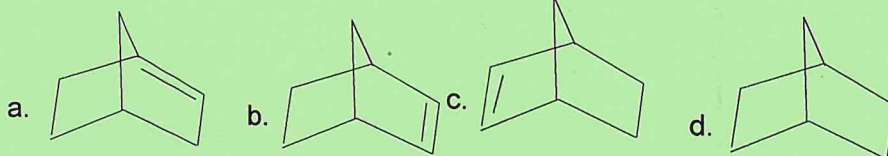
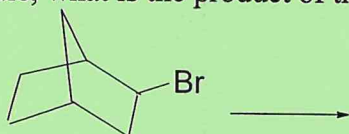
Max.Marks: 75

PART - A

CHOOSE THE CORRECT ANSWER

(10X1=10)

- Which one of the following compound is optically inactive?
 - d- tartaric acid
 - l- tartaric acid
 - meso- tartaric acid
 - lactic acid
- The relationship between H_a and H_b of trans- 1, 2 – dichloro cyclopropane are
 - enantiotopic
 - homotopic
 - diastereotopic
 - none of these
- In an S_N2 reaction, there is
 - partial racemization
 - complete racemization
 - complete inversion
 - partial inversion and mostly racemization
- The intermediate formed in wurtz reaction is
 - carbonium ion
 - carbanion
 - free radical
 - benzyne
- In $E2$ reaction, the dihedral angle of antiperiplanar conformation is
 - 0°
 - 90°
 - 120°
 - 180°
- According to Bret's rule, what is the product of the following reaction?



- The $n-\pi^*$ excitation is present in
 - alkanes
 - alcohols
 - amines
 - ketones
- For Norrish type -II cleavage, the carbonyl compound should possess at least
 - One hydrogen on γ - carbon
 - One hydrogen on β – carbon
 - One carbonyl group
 - one carbon- carbon double bond
- In sigmatropic rearrangement, there is
 - A change in the number of σ bonds
 - two new σ bonds are formed
 - One new σ bond is formed
 - no change in the number of π – bonds

10. Diels- Alder reaction is a

a) (4+2) cycloaddition

b) (4+4) cycloaddition

c) (2+2) cycloaddition

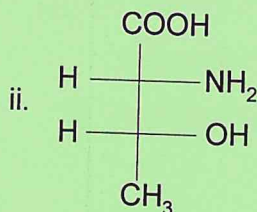
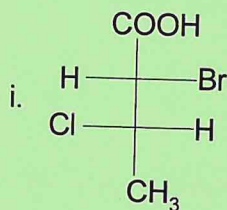
d) none of these

PART- B

ANSWER ALL THE QUESTIONS

(5X7=35)

11. a) Assign R and S configuration of the following compounds



(OR)

b) Explain the stereospecific and stereoselective reaction with examples.

12. a) What is neighbouring group participation? Explain with examples

(OR)

b) Explain mechanism of the following reactions:

(i) Ziegler alkylation

(ii) Chichibabin reaction

13. a) Explain the mechanism of Friedel – Crafts acylation

(OR)

b) Discuss about Stark -enamine reaction

14. a) Write the mechanism of the following reactions

(i) Paterno – Buchi reaction

(ii) Barton reaction

(OR)

b) What is Norrish type – II cleavage? Explain with mechanism.

15. a) Discuss (4n+2) cycloaddition reaction with correlation diagram

(OR)

b) Explain Claisen rearrangement with examples.

PART-C

ANSWER ANY THREE QUESTIONS

(3X10=30)

16. a) Discuss the optical activity of biphenyls.

b) Write a short note on enantiotopic faces.

17. a) With suitable example, explain S_N1 mechanism.

b) Discuss the effect of solvent on S_N1 and S_N2 mechanism in detail.

18. Explain the various factors which affects the E_1 and E_2 mechanism

19. a) Explain the photoreduction reaction with example.

b) Describe the photochemistry of enones.

20. Explain the conversion of 1,3 – butadiene to cyclobutene by FMO and correlation diagram method.