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Reg. No. : .....

Name : .....

Fourth Semester B.Sc. Degree Examination, August 2022

First Degree Programme under CBCSS

Chemistry

Core Course

CH 1441 : ORGANIC CHEMISTRY – I

(2017 – 2018 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

Answer **all** questions. Answer in **one** word to maximum **two** sentences. Each question carries **1** mark.

1. Give an example for a neutral electrophile.
2. Define inductive effect.
3. Give all example for all electrocyclic reaction.
4. What are nitrenes?
5. Write the structural formula of 2-methylprop-1-en-1-ol.
6. What are diastereomers?
7. What are photosensitizers?
8. What is meant by tortional strain?
9. What is/are the product/s formed when a bond undergoes heterolytic fission?
10. What are conforms?

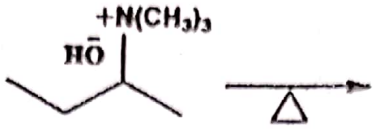
(10 × 1 = 10 Marks)

P.T.O.

SECTION – B

Short answer types. Answer any **eight** questions. Each question carries **2** marks.

11. Predict the product formed in the following reaction. Justify your answer.



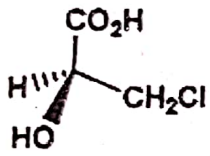
12. Why 2-butene is more stable than 1-butene?

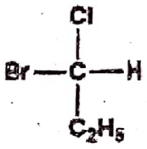
13. What are vat dyes?

14. What is basis of DL nomenclature of asymmetric compounds?

15. What is meant by enantiomeric excess?

16. Assign the configuration R or S to the following compounds

(a) 

(b) 

17. Explain the term chirality.

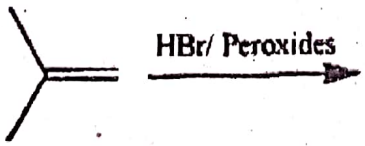
18. What are conformationally biased molecules? Explain.

19. What is geometrical isomerism?

20. Explain cycloaddition reaction with a suitable example.

21. Explain Walden Inversion.

22. Complete the reaction. Justify your answer.



(8 × 2 = 16 Marks)

SECTION – C

Short essay type. Answer any **six** questions. Each question carries 4 marks.

23. o-Chloro toluene when treated with sodamide in liquid ammonia gives o-toluidine and m-toluidine. Explain.
24. Explain the mechanism of E1 and E2 reactions.
25. Discuss the aromaticity of benzenoid and nonbenzenoid compounds.
26. Write a brief note on the optical activity of Tartaric Acid.
27. Phenol is more acidic than ethanol but less acidic than acetic acid. Explain.
28. Explain quinonoid theory of colour and constitution.
29. Write a note on the electrophilic substitution reactions of naphthalene.
30. Explain the photochemical conversion of benzophenone to benzopinacol.
31. Explain Norrish I and Norrish II reactions.

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** questions. Each question carries **15** marks.

32. Discuss the structure and stability of carbocations and carbanions.
33. Give an account on the conformational analysis of n-butane.
34. Explain :
    (a) Optical isomerism in allenes and biphenyls.
    (b) R-S notations.
35. Describe the preparation and use of the following dyes.
    (a) Congored
    (b) Alizarin
    (c) Fluorescein

(2 × 15 = 30 Marks)
