

Reg. No. :

Name :

**II Semester M.Sc. Degree (CBSS-Reg./Suppl. (Including Mercy Chance)/
Imp.) Examination, April 2021
(2014 Admission Onwards)
CHEMISTRY
CHE2C.06 : Organic Chemistry – II**

Time : 3 Hours

Max. Marks : 60

SECTION – A

Answer **all** questions in **one** word or **one** sentence. **Each** question carries **one** mark.

1. Illustrate the Diels-Alder reaction of cyclopentadiene and fumaric acid.
2. Depict one example of a (3, 3) sigmatropic rearrangement reaction.
3. How does the Wolff-Kishner reduction take place ?
4. Suggest reagents to convert acetone to 2-methyl but-2-ene.
5. Give the structure and importance of quinine.
6. Give an example for a triterpene molecule.
7. Teflon and PAN have industrial importance. What are their structures ?
8. Give an example for a synthetic rubber. (8×1=8)

SECTION – B

Answer **any eight** questions. Answer may be in **two** or **three** sentences. **Each** question carries **two** marks.

9. Illustrate the consequence of secondary orbital interaction.
10. Depict the HOMO and LUMO of the hexatriene molecule.

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11. Con-rotation leads to inversion. Justify the statement with suitable illustration.
12. What is McMurry coupling. Illustrate an example.
13. Give two applications of Gilman reagent.
14. Compare the reaction conditions for Oppenauer oxidation and MPV reduction.
15. Give an example each for a normal steroid and an allo steroid.
16. Differentiate penicillin from cephalosporin structurally.
17. What are the structural features of a flavanoid molecule ? Give examples.
18. What are fillers ? Why are they used in rubber industry ? Give example.
19. Give the structures of any two Vitamin B complexes.
20. Explain the vision process. (8×2=16)

SECTION – C

Short paragraph questions. Answer **any four** questions. **Each** question carries **three** marks.

21. Predict the products formed when the following molecules are heated
 - i) (2Z, 4E)- hexadiene and
 - ii) (2Z, 4Z, 6E)- octatriene.
22. Depict the cycloaddition of furan with dimethyl acetylenedicarboxylate.
23. Illustrate the Woodward and Prevost hydroxylations.
24. Explain the Birch reduction of anisole.
25. Explain the most important steps in the structure elucidation of cholesterol.
26. What are the chief steps in the biosynthesis of camphor ?
27. How are polyurethanes and caprolactams synthesized ?
28. Give a synthetic route for adenine and quanine. (4×3=12)

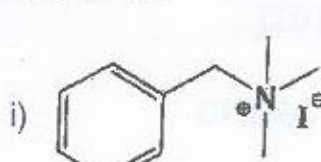
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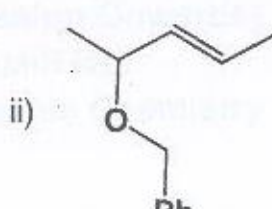
SECTION – D

Essay type questions. Answer **four** questions. **Each** question carries **six** marks.

29. A) Predict the products formed when the following compounds are treated with a base.



OR



- B) Illustrate the Click reactions between azides and acetylenes. Give four more examples of such 1,3-dipolar cycloadditions.

30. A) Illustrate Sharpless asymmetric epoxidation and Barton reaction.

OR

- B) Give the schematic representation to depict the application of

i) SeO_2 ii) NaCNBH_3

iii) mCPBA and

iv) DIBAL-H

31. A) Explain the biosynthesis of papaverine.

OR

- B) Discuss the biosynthesis of pinenes.

32. A) Describe the role of protecting groups in peptide synthesis.

OR

- B) Discuss the structure and synthesis of ascorbic acid.

(4×6=24)