

C 21262

(Pages : 3)

Name.....

Reg. No.....

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, APRIL 2022

Chemistry

CHE4B04—ORGANIC CHEMISTRY—I

(2014—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Section A*Answer all questions.**Each question carries 1 mark.*

1. Any two consecutive members of a homologous series differ in their molecular formula by _____ group.
2. Hybridization of carbon in benzene molecule is :
3. Meso tartaric acid is optically _____.(active/inactive)
4. Give any two examples of electrophiles.
5. The product obtained when acetylene gas is passed through 40% H_2SO_4 containing 1% HgSO_4 is _____.
6. Reductive ozonolysis of ethene yields _____.
7. Alkaline KMnO_4 is called _____ reagent.
8. Give any two examples of ring deactivating groups.
9. Hydrogenation of but-1-yne using Lindlar's catalyst yields _____.
10. Give any two groups having -I effect.

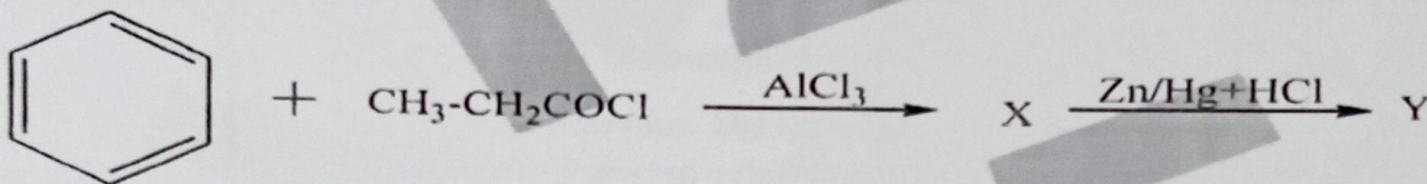
(10 × 1 = 10 marks)

Section B*Answer any ten questions.**Each question carries 2 marks.*

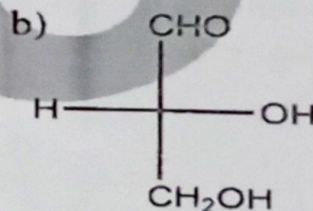
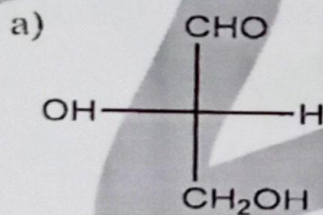
11. What are tautomers ?
12. Draw the Newman projection formula of staggered and eclipsed form of ethane molecule.

Turn over

13. What are enantiomers ?
14. Maleic acid readily forms the anhydride compared to fumaric acid. Why?
15. What is meant by steric effect ?
16. Explain cis hydroxylation with a suitable reagent.
17. Predict A and B in the following reaction :



18. What are carbenes ?
19. Explain peroxide effect.
20. Assign R and S configuration of :



21. Explain ortho-para and meta directing groups.
22. What are anti-aromatic compounds ? Give an example.

(10 × 2 =

Section C

Answer any **five** questions.
Each question carries 6 marks.

23. Explain position isomerism, functional isomerism and metamerism.
24. Discuss the optical isomerism in allenes.

25. What is hyperconjugation ? Compare the stability of toluene and ethyl benzene.
26. What is meant by resolution ? Explain any two methods of resolution.
27. Discuss any three tests for unsaturation.
28. Explain the addition of hydrogen halide to buta-1, 3-diene.
29. Discuss Haworth synthesis of naphthalene ?
30. Give the mechanism of Friedel-Craft's alkylation and acylation.

(5 × 6 = 30 marks)

Section D

Answer any two questions.

Each question carries 10 marks.

31. What are conformers ? Explain briefly the conformational analysis of ethane and *n*-butane.
32. Explain the formation and stability of carbocation, carbanion and free radicals.
33. What are hydrocarbons ? Explain any two general methods of preparation of alkane, alkene and alkyne.
34. a) Explain Huckel's rule of aromaticity with suitable examples. (4 marks)
b) Explain the mechanism of halogenation and nitration of benzene. (6 marks)

[2 × 10 = 20 marks]