QP CODE: 21101942

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Reg No : .....

Name : .....

B.Sc DEGREE (CBCS)EXAMINATION, AUGUST 2021

Third Semester

Core Course - CH3CRT03 - ORGANIC CHEMISTRY-I

Common to B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry & B.Sc Chemistry Model III Petrochemicals

2017 Admission Onwards

FF7C1341

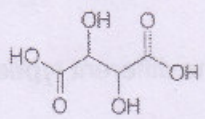
Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. Distingulsh between homolysis and heterolysis.
2. What is a redox reaction?
3. State the difference between meso compound and racemic mixture.
4. Assign the configuration of the following compound



5. Draw the Newman projection formula for Ethane.
6. Draw the Sawhorse projection formula for cyclohexane. Which is more stable? Why?
7. How will you prepare alkane from alkyl halide?
8. Write the product when cyclohexene is treated with dil.$KMnO_4$
9. Which type of the mechanism is involved in the reaction between t-butyl carbonium ion and hydroxyl ion?
10. What are annulenes?
11. Draw the resonating structures of naphthalene.
12. Classify the different pericyclic reactions.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write the structural formula of the following compounds: **a)** 4- methyl hept-2-en-5-yn-1-ol **b)** 2 chloro-3 bromo- 4,4 dimethyl pentanal **c)** spiro[2,4]- hepta-4,6-diene **d)** isopropyl dimethylamine **e)** Hex-4-yn-2-one
14. Compare the acid strengths of halo acetic acids
15. What is asymmetric synthesis? Explain with example.
16. Calculate the angle strain in the following molecules
    a) cyclobutane **b)** cyclopropane **c)** cyclohexane **d)** cyclopentane
17. Why fluorine is not used for addition reaction with alkenes?
18. Explain how ozonolysis reaction helps in determining alkene structures?
19. What are the important criteria for a molecule to show aromaticity? Explain.
20. OH group in phenol is ortho and para directing where as NO_2 group in nitrobenzene is meta directing. Give reason for it.
21. 1,3-butadiene reacts with maleic anhydride. Discuss ?

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Give any two methods of preparation of carbenes. Discuss the different types of carbenes and their structure.
23. Give the stereoisomers of tartaric acid. Give an account for the lack of optical activity in meso form and racemic mixtures.
24. Discuss the effect of the folllowing on SN_2 reaction
    a) Nature of nucleophilic reagent **b)** polarity of the solvent **c)** concentration of nucleophilic reagent
25. Discuss the benzyne mechanism for nucleophilic aromatic Substitution reactions? Give evidencesin support of your answer

(2×10=20)