

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the year 2019-2020 & thereafter)

SUBJECT CODE: 19CH/MC/OC24

B.Sc. DEGREE EXAMINATION, APRIL 2021

BRANCH IV - CHEMISTRY

SECOND SEMESTER

COURSE: MAJOR CORE

PAPER : ORGANIC CHEMISTRY- I

TIME : 90 MINUTES

MAX.MARKS : 50

SECTION – A

(15x1=15marks)

Answer all the questions

I. CHOOSE THE CORRECT ANSWER:

1. The number of optically active forms of 2,3-dihydroxy butanoic acid is _____
a) 4 b) 3 c) 2 d) 1
2. The reaction with one of the following reagents is an example for anti addition
a) Br₂ b) BH₃ c) OsO₄ d) H₂/Pd
3. Which one of the following is o, p -directing group?
a) –OH b) –NO₂ c) –CN d) –COOH
4. An activating group among the following is _____
a) –NHCOCH₃ b) –CN c) –COOH d) –Cl
5. β-hydroxy esters are prepared using _____ reaction
a) Claisen condensation b) Reformatsky c) Perkin d) Knoevenagel

II. FILL IN THE BLANKS:

6. The reagent used for Clemmensen reduction is _____
7. Alkyl halides undergo β-elimination in the presence of _____
8. Benzyne is an intermediate in _____ reaction
9. Example for a stereospecific reaction is _____

10. The electrophile for sulphonation reaction is _____

III. ANSWER IN A LINE OR TWO:

11. Name any two solvents that can be used for S_N1 reaction.

12. What is a racemic mixture?

13. Give any one method of preparation of cinnamaldehyde.

14. What is specific rotation?

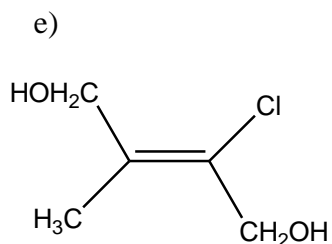
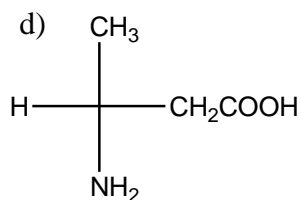
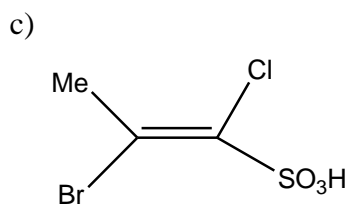
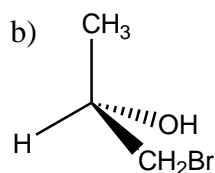
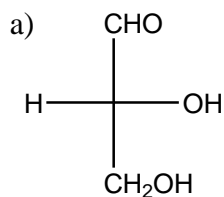
15. What is Hofmann rule?

SECTION – B

ANSWER ANY THREE QUESTIONS:

(3X5=15 marks)

16. Assign R/S or E/Z configuration to the following compounds:



17. Describe the factors that influence S_N1 reaction.

18. There are two alkenes that react with HBr to give 1-bromomethylcyclopentane .

a) Identify the alkenes

b) Will both alkenes give the same product when they react with HBr/peroxide? Justify the answer.

19. Outline the mechanism of MPV reduction.

20. The addition of Br₂ to 1,3-butadiene yields the 1,2 –product which is kinetically controlled and the 1,4-product which is thermodynamically controlled. Explain

SECTION – C

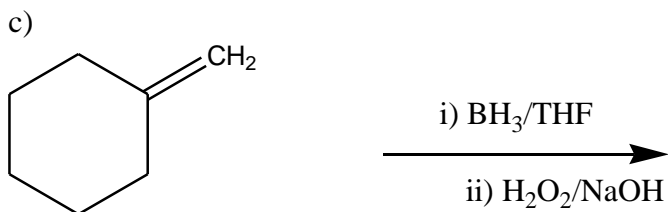
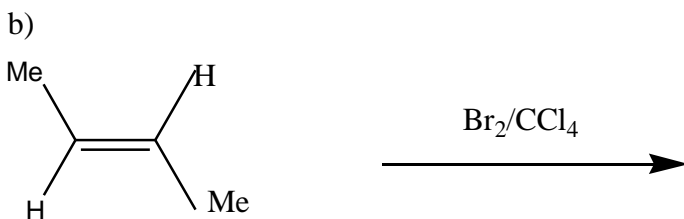
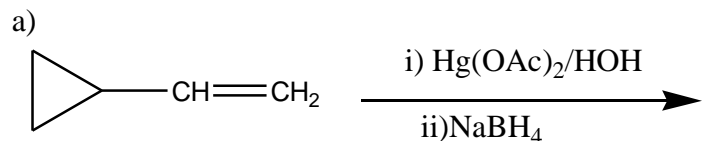
ANSWER ANY TWO QUESTIONS:

(2X10=20 marks)

21. a) Discuss the conformational analysis of cyclohexane.

b) Why are the halogens o,p –directing but deactivating? (7+3)

22. Predict the products, postulate mechanisms and explain the stereochemistry where required:



(3+3+4)

23.i) Predict whether each of the following reaction is an E2 or an E1 reaction .Give the major product of each reaction:

