

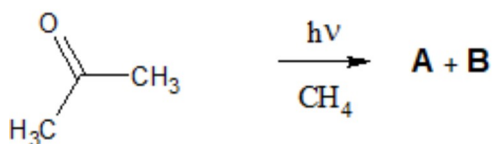
M. Sc DEGREE END SEMESTER EXAMINATION - OCT 2020 : FEBRUARY 2021**SEMESTER 1 : CHEMISTRY / PHARMACEUTICAL CHEMISTRY****COURSE : 16P1CHET02 / 16P1CPHT02 : BASIC ORGANIC CHEMISTRY***(For Regular - 2020 Admission and Supplementary - 2016/2017/2018/2019 Admissions)*

Time : Three Hours

Max. Marks: 75

PART A**Answer any 10 (2 marks each)**

1. Give an example of a Di- π -methane rearrangement.
2. Norbornene reacts with benzophenone triplet to give oxetane, while it reacts with acetone triplet to give its dimer. Account.
3. What are A and B. Explain.



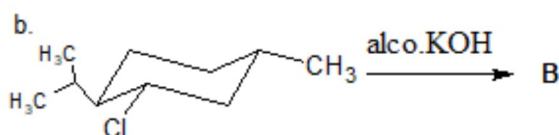
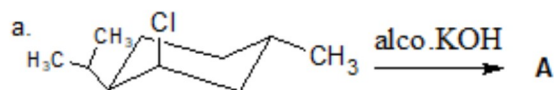
4. Menthyl xanthate on pyrolysis yield 70% 3-menthene. Explain.
5. In the case of butan-2,3-diols, the active form is stable than the meso form. Why?
6. Define alternating(improper) axis of symmetry. Explain the relationship between S_n and optical activity.
7. What is atropisomerism? Explain with an example.
8. Explain the mechanism of ester hydrolysis by B_{AC}^2 mechanism?
9. Which is more acidic, chloroacetic acid or fluoroacetic acid and why?
10. Explain thermodynamic control of a reaction taking a suitable example.
11. Explain solvent isotope effect.
12. What are spiro compounds? Give example?
13. Write briefly on synthesis of carbon nanotubes?

(2 x 10 = 20)**PART B****Answer any 5 questions by attempting not more than 3 questions from each of the following bunches (5 marks each)****Bunch 1**

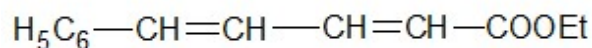
14. Explain the mechanism of Paterno-Buchi reaction and Barton reaction.
15. Write a brief note on the effects on conformation on the semipinacolic deamination of various isomers of 2-aminocyclohexanols.
16. Write briefly on the mechanisms of interconversion of geometrical isomers.
17. Explain benzyne mechanism of aromatic nucleophilic substitution with example?

Bunch 2

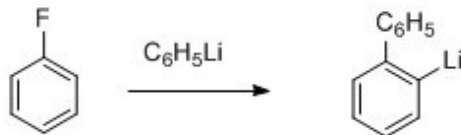
18. Comment on the relative rates of the following reactions . Draw the configuration of the products A and B formed. How are they related?



19. How many geometrical isomers are possible for the compound? Draw the isomers and name them in E and Z system of nomenclature.



20. Explain the following reaction with mechanism and the intermediate?



21. Derive Taft equation and explain its significance.

(5 x 5 = 25)

PART C

Answer any 2 (15 marks each)

22. Explain in detail the significance of *Jablonski* diagram and related processes and write a note on the photochemistry of vision.
23. Discuss the conformational analysis of cyclohexane and comment on the effect of conformation on the reactivities of cyclohexane-1,2-dicarboxylic acids and esterification of 4-t-butylcyclohexanols.
24. Discuss prostereoisomerism giving emphasis on stereoheterotopic ligands and faces, prochirality and the use of NMR spectroscopy as a tool for the identification of stereo heterotopic hydrogens.
25. (a) Explain Huckel's rule of aromaticity and Craigs rule?
(b) Discuss NMR and aromaticity.

(15 x 2 = 30)