19P213 (Pages: 2) Name……..…….

Reg. No…….……..

SECOND SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2020

(CUCSS - PG)

CC19P CHE2 C07 - REACTION MECHANISM IN ORGANIC CHEMISTRY

(Chemistry)

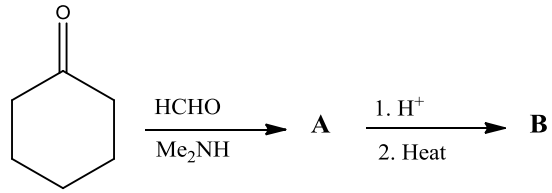
(2019 Admissions - Regular)

Time: Three Hours Maximum: 30 Weightage

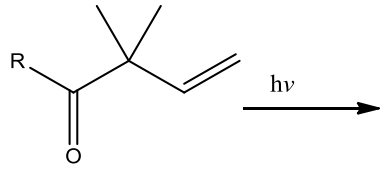
Section - A

Answer any ***eight*** questions. Each question carries 1 weightage.

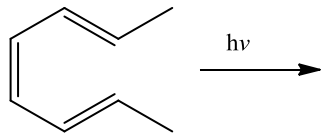
1. Explain ***ene*** reaction by taking a suitable example.
2. What are anthocyanins? Give an example.
3. Predict the products A and B.



4. Discuss briefly the mechanism of Prins reaction.
5. Draw the suprafacial and antarafacial combination in 1,5-sigmatropic reaction.
6. Explain Barton reaction with mechanism.
7. Identify the reaction and give the product of the following.



8. Predict the product with correct stereochemistry.



9. Explain $B_{AC}2$ mechanism with suitable example.
10. What is meant by *ipso* substitution?

(10 x 1 = 1 Weightage)

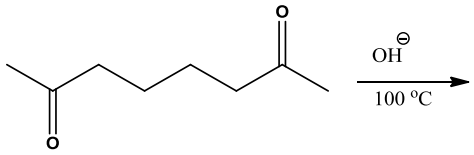
Section - B

Answer any ***six*** questions. Each question carries 2 weightage.

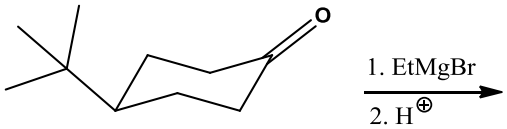
11. With the help of correlation diagram, show that [2+2] cycloaddition reaction is photochemically allowed process.
12. Discuss the mechanisms of stobbe condensation.

13. Explain benzyne mechanism with suitable examples.
14. How will you convert cholesterol into testosterone?
15. Predict the product of the following and justify your answer.

(i)



(ii)



16. With the help of suitable substrates, explain the extrusion reactions of N_2, CO and CO_2.
17. Write a note on carbenes and nitrenes.
18. Discuss the mechanism of Hoffmann- Loeffler- Freytag reaction.

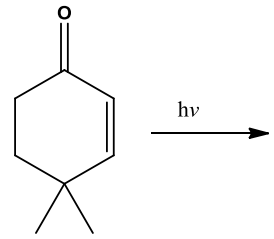
(6 x 2 = 12 Weightage)

Section - C

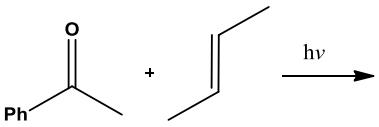
Answer any ***two*** questions. Each question carries 5 weightage.

19. Discuss Saytzev and Hofmann elimination.
20. Give the steps involved in the total synthesis of longifolene.
21. Give the products with mechanism of the following reactions.

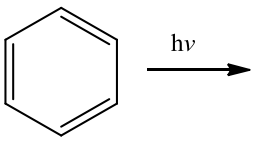
(i)



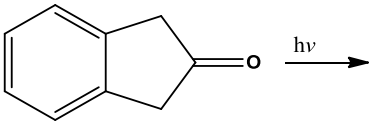
(ii)



(iii)



(iv)



22. (i) Explain the Woodward- Hoffmann selection rules for cycloaddition reactions and
    (ii) Construct the correlation diagram for the disrotatory conversion of hexatriene into cyclohexadiene system. With the help of the diagram so constructed, predict whether this transformation is allowed thermally or photochemically.

(2 x 5 = 10 Weightage)

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