

Reg. No

Name

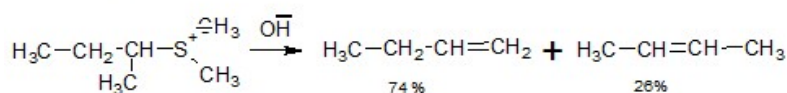
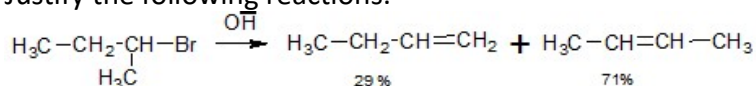
M. Sc DEGREE END SEMESTER EXAMINATION - MARCH 2020
SEMESTER 2 : CHEMISTRY / PHARMACEUTICAL CHEMISTRY
COURSE : 16P2CHET06 / 16P2CPHT06 : ORGANIC REACTION MECHANISM
(For Regular - 2019 Admission & Supplementary 2018/2017/2016 Admissions)

Time : Three Hours

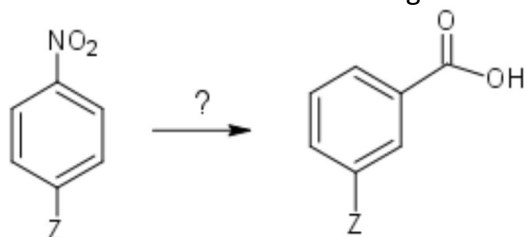
Max. Marks: 75

Section A
Answer any 10 (2 marks each)

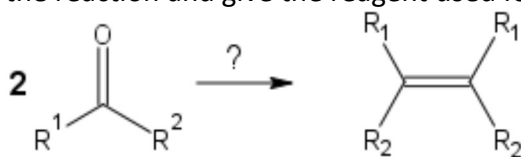
- What is Gatterman-Koch reaction? Give an example.
- Justify the following reactions.



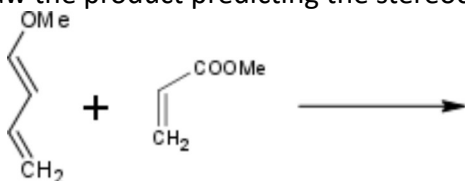
- $\text{CH}_3\text{CH}=\text{CHCl}$ is very unreactive towards nucleophiles. Provide an explanation
- Name the reaction. Give the reagent used for the conversion



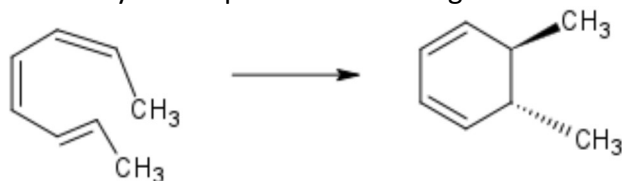
- How is E-alkene synthesized by Peterson olefination reaction?
- Explain Wagner-Meerwein rearrangement.
- What do you mean by benzyne?
- Name the reaction and give the reagent used for the conversion.



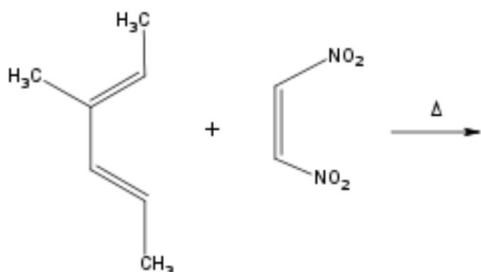
- Draw the product predicting the stereochemistry



- How will you complete the following reaction? Explain.



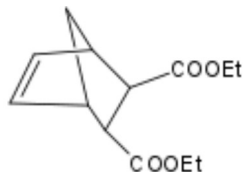
- Predict the major product in the reaction given below. Rationalise your answer.



12. How do you bring about the following reaction? Explain.



13. How can the following molecule be synthesized by Diels Alder reaction?



(2 x 10 = 20)

Section B

Answer any 3 (5 marks each)

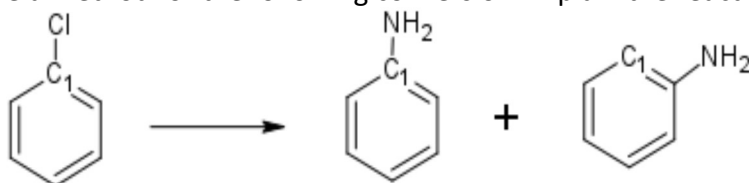
- Why $\text{PhC}(\text{CH}_3)_2\text{CH}_2\text{Cl}$ undergoes solvolytic rearrangement thousands of times faster than neopentyl chloride? Explain with mechanism?
- Give an account of carbenes, their classification and stability.
- Explain Hoffmann rearrangement with mechanism. Give any one synthetic application.
- Explain Möbius–Hückel treatment for analyzing cyclisation reactions.
- Discuss in detail the importance of Click Chemistry taking any two examples.

(5 x 3 = 15)

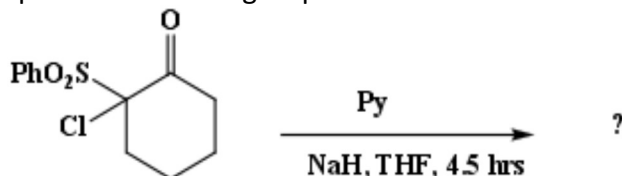
Section C

Answer any 2 (5 marks each)

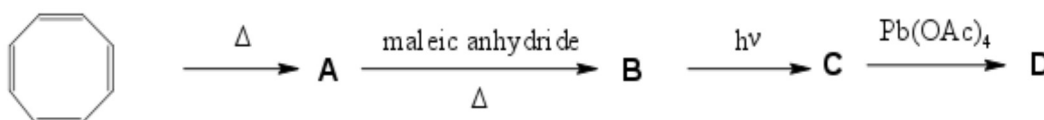
19. Give a method for the following conversion. Explain the reaction with the mechanism.



20. Complete the following sequence



- Starting with cyclohexene and using any other needed reagent outline the synthesis of 7,7-dibromobicyclo [4.1.0]heptane.
- Complete the following reaction sequence. Rationalise your answer

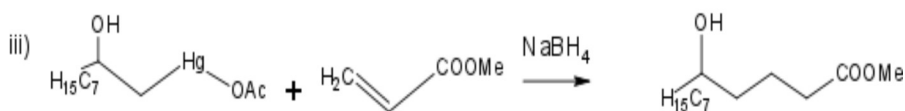
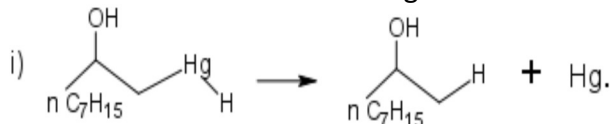


(5 x 2 = 10)

Section D

Answer any 2 (15 marks each)

23. Discuss the mechanism of electrophilic addition to a carbon-carbon double bond. Draw the energy profile diagram for this reaction and prove that the addition of the electrophile is the rate determining step? Illustrate that the addition to carbon-carbon double bonds are mostly electrophilic in nature?
24. Discuss the mechanism of any five reactions involving carbocation as an intermediate.
25. Give the mechanism of the following radical reactions.



26. Write a detailed account of pyrolytic eliminations taking any four such reactions.

(15 x 2 = 30)