Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2020-21

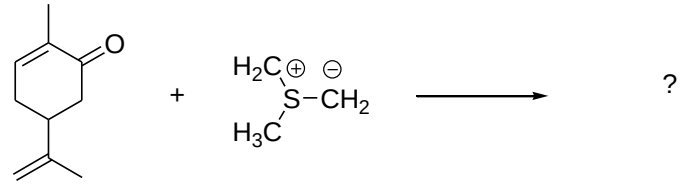
EXM/P/09/00

Year and Program: 2020-21/ S.Y. M.Sc.	**School of Science**	**Department of Chemistry**
Course Code: CHS601	**Course Title: Organic Reaction Mechanism and Natural Product**	**Semester : III**
Day : Friday **Date :18/12/2020**	**End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

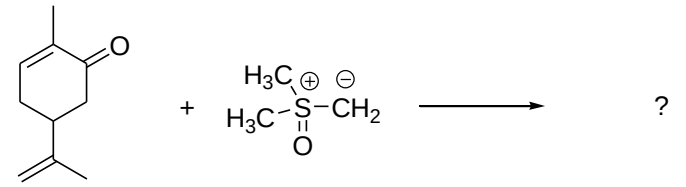
Instructions: 1) All Questions are compulsory.

Q.1	**Answer the following (any Two)**	**Marks**	Bloom's Level	CO
a)	i) What is Curtin-Hammett principle?Explain and derive Curtin-Hammett principle. ii) Explain with example, how isotopic labeling is useful in the determination of reaction mechanism?	**8**	L2	CO1
b)	i) The ρ value for the alkaline hydrolysis of methyl esters of substituted benzoic acid is 2.38 and the rate constant of alkaline hydrolysis of methyl benzoate under the similar condition is 2×10^{-4} M^{-1} s^{-1}. Calculate the rate constant for the hydrolysis of methyl m-nitro benzoate. (σ_m= 0.71) ii) The pKa value of p-amino-benzoic acid and p-nitro-benzoic acid is 4.82, 3.42 respectively. Calculate σ value for both substituted benzoic acid (given pKa value of benzoic acid is 4.20).	**8**	L3	CO2
c)	What areylides? Give their types? What will be the products when phosphorous and sulphur ylides react with carbonyl compound?	**8**	L2	CO3
Q.2	**Answer the following (any two)**			
a)	Complete the following reactions.Give their mechanism. Explain chemo -electivity of the following reaction.	**8**	L4	CO3

i)



ii)

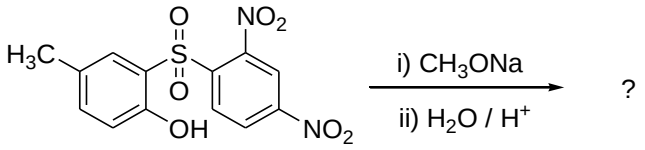


b)	Explain Favorskii rearrangement with mechanism.Give the evidences for formation of cyclo-propane ring during rearrangement.	**8**	L3	CO4
c)	Give the steps involved in the structural elucidation of Menthol. Write total synthesis of Menthol.	**8**	L3	CO5

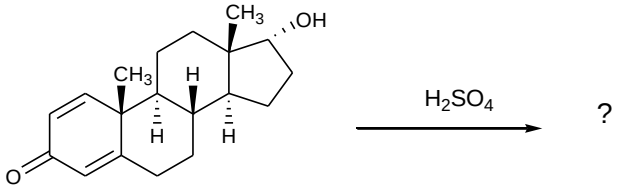
Q.3 Answer the following (any two)

a)	i) What are non-classical carbocation? Discuss the stability of the non-classical carbocation. ii) What arenitrenes? How they are formed? Give the mechanism of two reactions involving nitrenes as intermediate.	**9**	L3	CO3
b)	Identify reactionand complete the following reaction with detail mechanism.	**9**	L4	CO4

i)



ii)



c)	Give the total synthesis of morphine molecule.	**9**	L4	CO5

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