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LB-118-2023

FACULTY OF SCIENCE

M.Sc. (First Year) (Sem-II) Examination APRIL/MAY 2023

CHEMISTRY

Organic Chemistry - II CH-422

Duration: 3:00 Hours Marks:75

- i) Attempt all questions
- ii) Figures to the right indicates full marks.
- Q1 Attempt any three of the following.

15

- a) Explain the regioselectivity and chemoselectivity with suitable example.
- b) Explain Arenium ion mechanism with suitable examples.
- c) Explain the effect of Substrate, and leaving group in aliphatic electrophilic substitution reaction.
- d) What are cycloaddition reactions? Explain the cycloaddition between the two molecules of ethylene $(2\pi + 2\pi)$ system
- e) Explain Norrish Type-I and II with suitable examples.
- Q2 Answer any three of the following.

15

- a) What is sharpless Asymmetric epoxidation? Give its mechanism and application
- b) Explain witting reaction with mechanism and stereochemistry.
- c) Interconversion of 1, 3, 5 hexatriene \rightleftharpoons 1, 3 cyclohexadiene under thermal and photochemical condition Explain by FMO method.
- d) What is Paterno Buchi reaction? Discuss mechanism along with stereochemical sequence.
- e) Explain the action of Grignard reagent on the following compound with mechanism

Q3

a) What is photoreduction? Explain the photoreduction of benzophenone with mechanism?

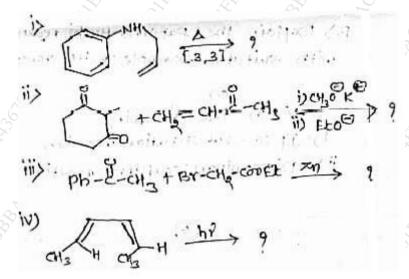
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Explain the following reactions with mechanism.

- i) Michael reaction
- ii) Mannich reaction
- b) Predict the product with mechanism of the following (any four)

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04	A) With the help of FMO and correlation diagram method explain 0	7
Q4	interconversion of 1, 3 butadiene in to cyclobutene under thermal &	,
	photochemical condition.	
	Or Art College	
	Illustrate the mechanism for the following reactions with suitable examples.	
	i) Michael addition	
	ii) Benzoin condensation	
	B) Explain the Paterno - Buchi reaction with suitable example & its stereochemistry	8
	Or Sir Sir Sir Sir Sir Sir Sir Sir Sir Si	
	Explain the following	
	i) Ipso - substitution reaction	
	ii) Diazonium coupling reaction	
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Q5 Wr	rite short note on any three 1	5
AND THE OWN THE WITH	a) ortho - para ratio	
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B. 38. 10.	c) Photochemical formulation of smog	
	d) 1, 3 dipolar cycloaddition reaction	
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