

Unit 9 - Week 8

Course outline

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Lecture 35 : General Catalysis: Part A

Lecture 36 : General Catalysis: Part B

Lecture 37 : Enzyme Catalysis

Lecture 38 : Electrophilic Catalysis

Lecture 39: Other Types of Catalysis

Lecture 40: Course Summary

Quiz : Assignment 8

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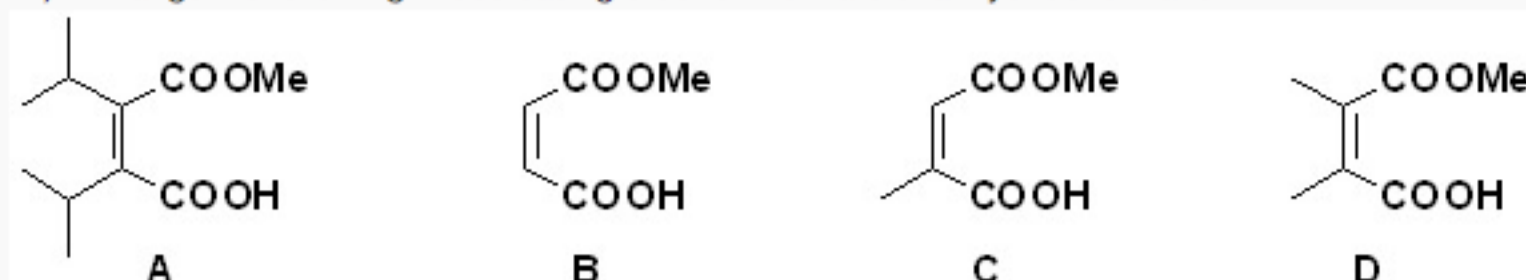
Assignment 8

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-09-25, 23:59 IST.

1) Arrange the following in decreasing order of their rate of anhydride formation.

1 point

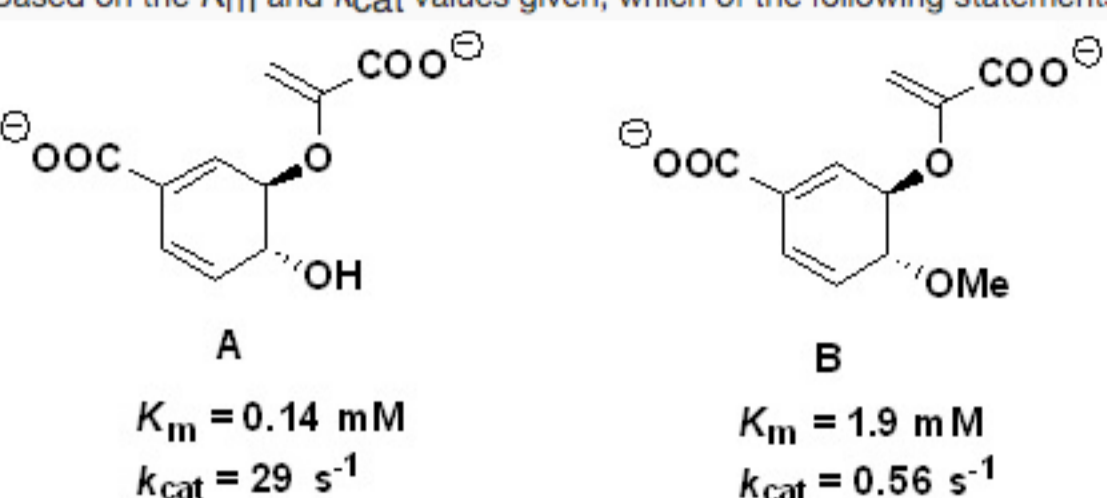


- A > B > C > D
 A > D > C > B
 B > C > D > A
 D > A > C > B

No, the answer is incorrect.
Score: 0
Accepted Answers:
A > D > C > B

2) An enzyme catalyzes the Claisen rearrangement of two compounds given below. Based on the K_m and k_{cat} values given, which of the following statements is true

1 point



- Compound A binds more tightly to the enzyme
 Compound B binds more tightly to the enzyme
 Compound A rearranges more quickly
 Compound B rearranges more quickly

No, the answer is incorrect.
Score: 0
Accepted Answers:
Compound A binds more tightly to the enzyme
Compound A rearranges more quickly

3) The Bronsted catalysis law for general acids is given as

1 point

$$\text{Log } k = -\alpha \text{ pKa} + C$$

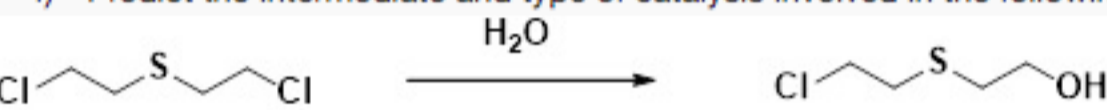
Which of the following statements are true for the above catalysis law?

- α indicated the extent of protonation in the transition state of rds.
 The value of α generally lies in between 0 and 1.
 A negative value of α indicates that the increasing acid strength results in a decrease in catalytic activity.
 A negative value of α indicates that the increasing acid strength results in an increase in catalytic activity.

No, the answer is incorrect.
Score: 0
Accepted Answers:
 α indicated the extent of protonation in the transition state of rds.
The value of α generally lies in between 0 and 1.
A negative value of α indicates that the increasing acid strength results in a decrease in catalytic activity.

4) Predict the intermediate and type of catalysis involved in the following reaction.

1 point

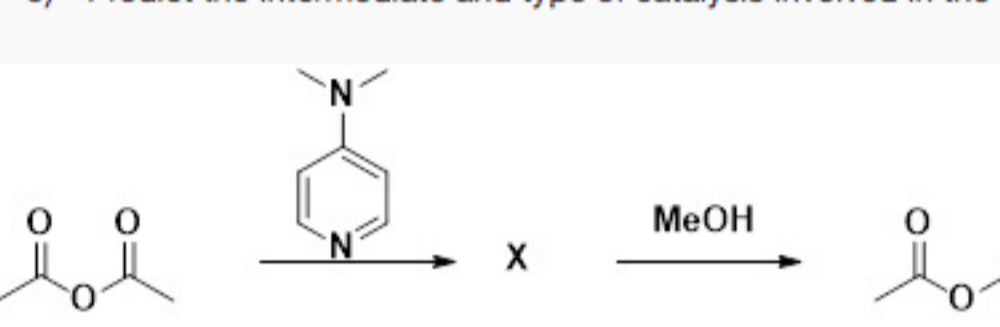


- , Nucleophilic catalysis
 , Covalent catalysis
 , Electrophilic catalysis
 , Strain catalysis

No, the answer is incorrect.
Score: 0
Accepted Answers:
 , Strain catalysis

5) Predict the intermediate and type of catalysis involved in the following reaction.

1 point



- , Nucleophilic catalysis
 , Nucleophilic catalysis
 , Electrophilic catalysis

No, the answer is incorrect.
Score: 0
Accepted Answers:
 , Nucleophilic catalysis

6) In Michaelis-Menten equation of enzyme kinetics, K_m stands for?

1 point

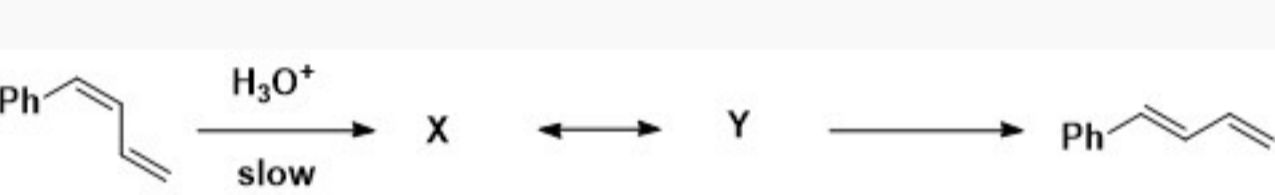
$$\text{Rate} = \frac{V_{\text{max}} [S]}{[S] + K_m}$$

- Enzyme concentration at which the rate of the reaction is half to its maximum rate.
 Substrate concentration at which the rate of the reaction is maximum.
 Substrate concentration at which the rate of the reaction is half to its maximum rate.
 Enzyme concentration at which the rate of the reaction is maximum.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Substrate concentration at which the rate of the reaction is half to its maximum rate.

7) What would be the two intermediates X and Y in the following reaction?

1 point

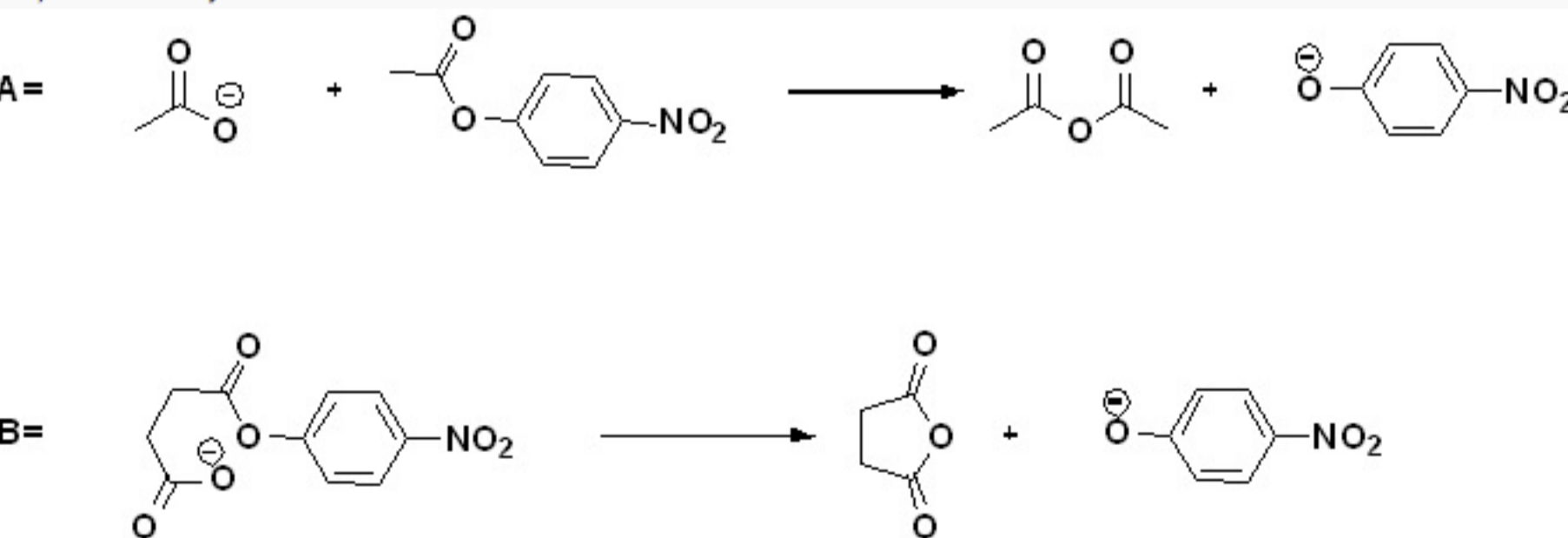


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No, the answer is incorrect.
Score: 0
Accepted Answers:

8) What can you comment about the rates of reactions A and B?

1 point

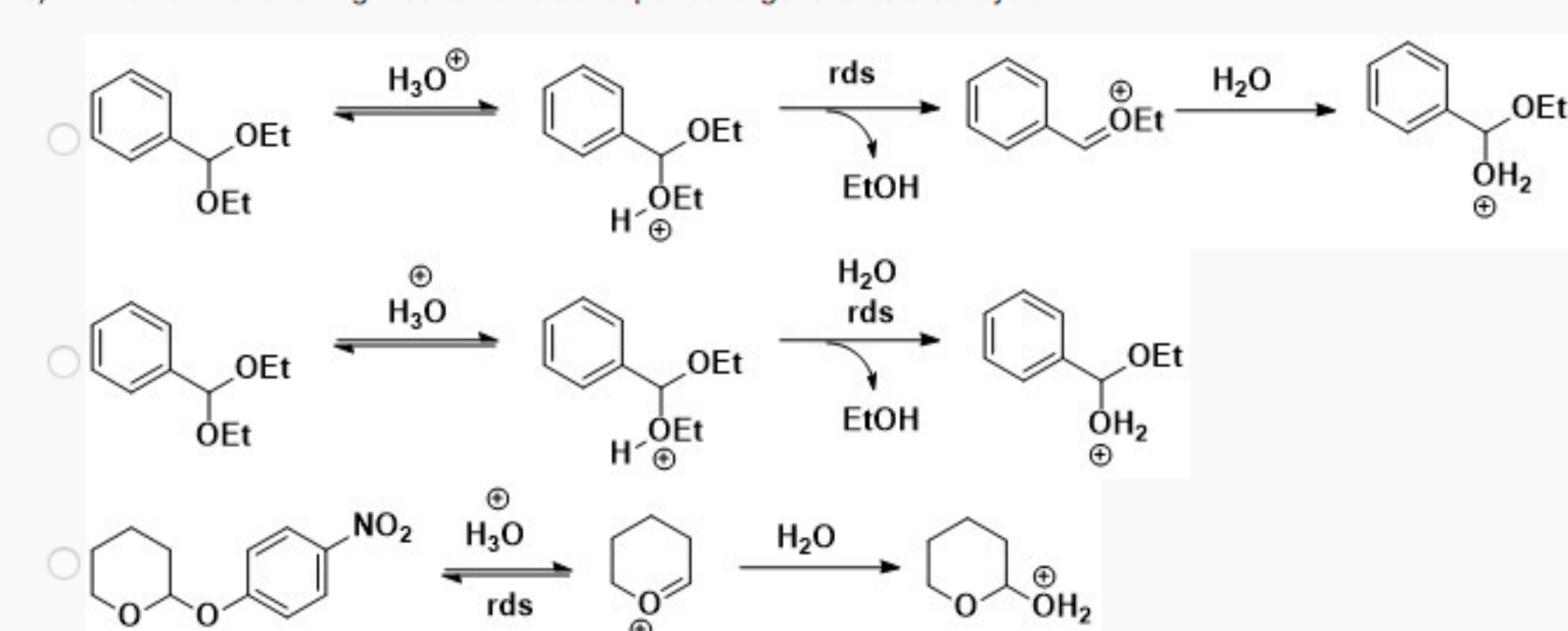


- A will proceed faster than B
 B will proceed faster than A
 Both will proceed with same rate
 Can't be predicted.

No, the answer is incorrect.
Score: 0
Accepted Answers:
B will proceed faster than A

9) Which of the following mechanisms corresponds to general acid catalysis?

1 point



No, the answer is incorrect.
Score: 0
Accepted Answers: