

Reg. No. :

Name :

First Semester M.Sc. Degree Examination, August 2021

Chemistry/Analytical Chemistry/Polymer Chemistry

CH/CL/PC 212 : ORGANIC CHEMISTRY — I

(2020 Admission)

Time : 3 Hours

Max. Marks : 75

PART – A

Answer **any two** sub-questions among (a), (b), or (c) from each question. Each sub-question carries **2** marks

1. (a) How do you determine Re and Si face?
(b) Discuss the isomerism occurs in substituted spiranes.
(c) What is the application of Cram's rule?
2. (a) Discuss the preparation and stability of triphenyl methyl free radical.
(b) Discuss the reactivity of singlet and triplet carbenes.
(c) Discuss two methods for the generation of nitrenes.
3. (a) What is Walden inversion?
(b) What are non-classical carbocations?
(c) Compare S_N1 and S_N2 reactions.
4. (a) What is Iodo-lactonization?
(b) What is Robinson annulation? What is its application?
(c) What are the uses of sulfur ylides?

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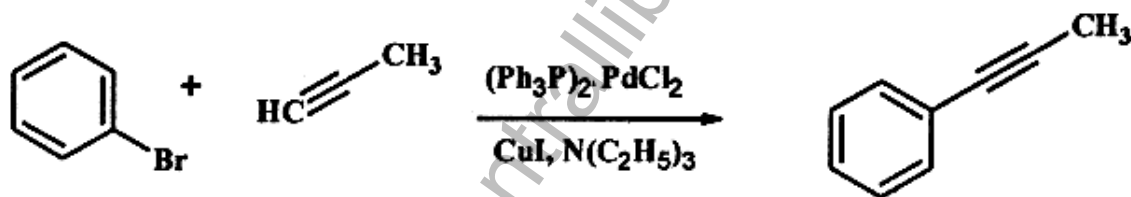
5. (a) What is E1cB mechanism?
 (b) What is Hofmann elimination rule?
 (c) What are the factors that determine elimination proceed via E1 or E2 mechanism?

(10 × 2 = 20 Marks)

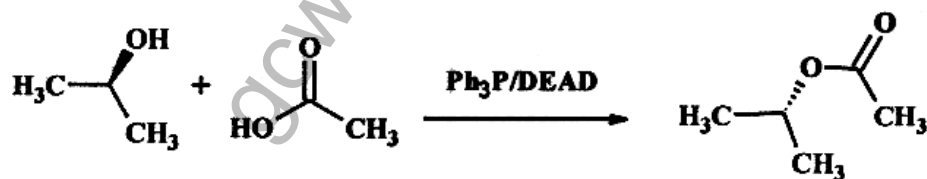
PART – B

Answer either (a) or (b) of each question. Each question carries 5 marks.

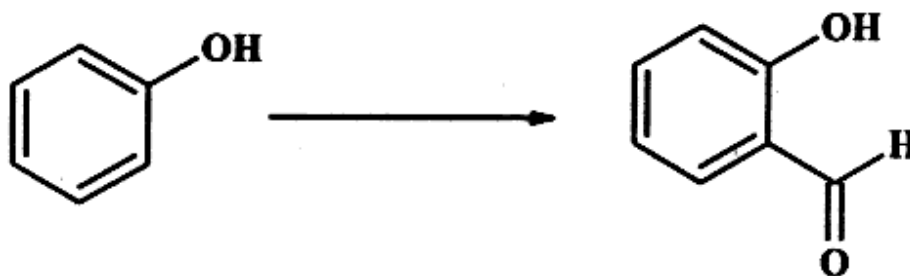
6. (a) Briefly describe the Felkin-Ahn model.
 (b) Explain the conformational analysis of decalin.
 7. (a) Discuss the mechanism of Pschorr cyclization.
 (b) Describe the mechanism of the following conversion:



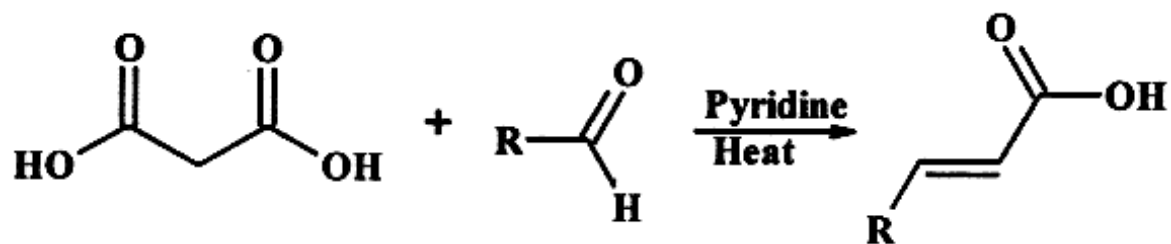
8. (a) Discuss the mechanism of the following reaction:



- (b) Effect the following conversion and explain the mechanism:



9. (a) Describe the mechanism of the following reaction:



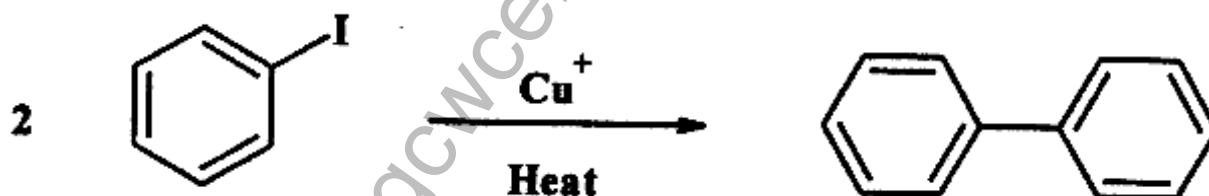
- (b) What is Benzoin condensation? Give its mechanism.
10. (a) What is Chugaev reaction? Discuss its mechanism.
- (b) What is Wittig reaction? Give its mechanism. Discuss the scope of Wittig reaction.

(5 × 5 = 25 Marks)

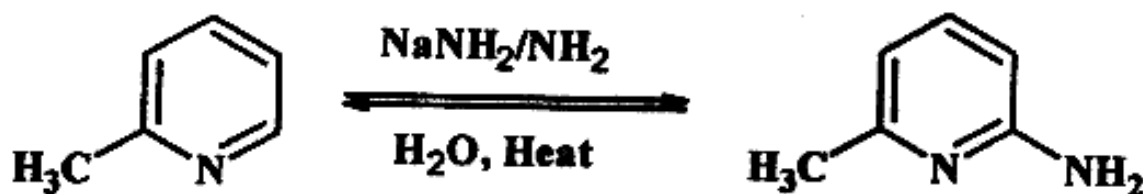
PART – C

Answer **any three** questions. Each question carries **10** marks.

11. (a) Distinguish between Stereospecific and stereoselective synthesis.
- (b) Discuss the importance of stereochemistry in drugs.
12. (a) Explain the mechanism of the following reaction:



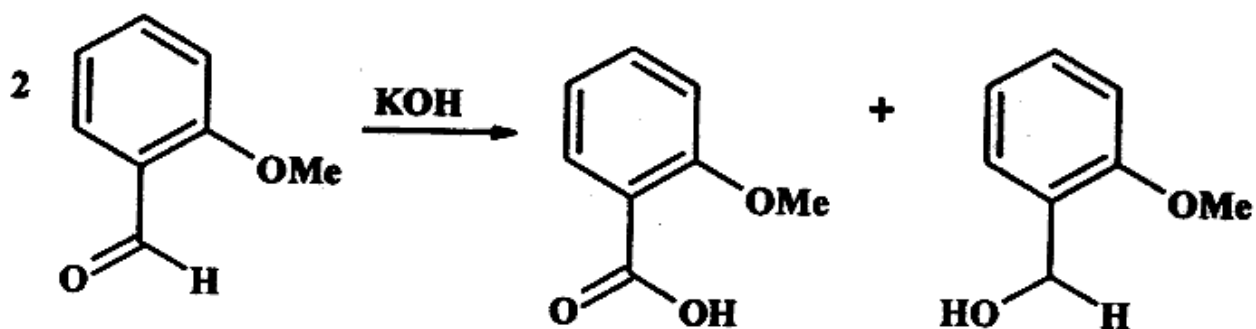
- (b) Explain the $\text{S}_{\text{RN}}1$ mechanism.
13. (a) Describe the mechanism of the following reaction:



- (b) Explain the mechanisms of acid and base catalyzed ester hydrolysis.

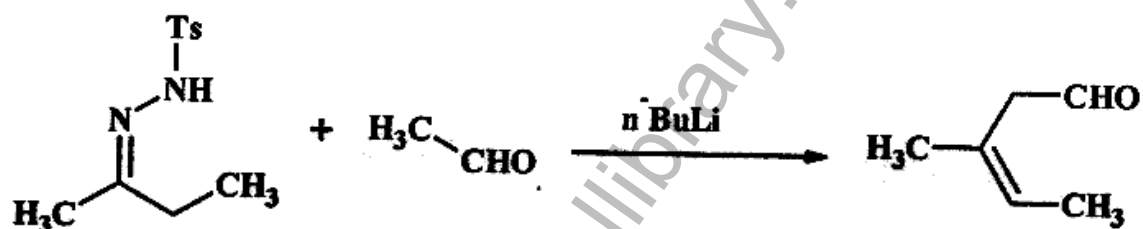


14. (a) Describe the mechanism of the following reaction:



(b) What is Perkin reaction? Explain its mechanism.

15. (a) Discuss the mechanism of the following reaction:



(b) What is Peterson reaction? Discuss its mechanism.

(3 × 10 = 30 Marks)

