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S – 6287

Reg. No. : .....

Name : .....

First Semester M.Sc. Degree Examination, April 2024

Chemistry/Analytical Chemistry/Polymer Chemistry/Chemistry with  
Specialization in Drug Design and Development

CH 212/CL 212/PC 212/CHDD 512 : ORGANIC CHEMISTRY I

(2020 Admission Onwards)

Time : 3 Hours

Max. Marks : 75

SECTION – A

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

- Discuss the nomenclature of heteroaromatic systems containing nitrogen.
  - What is axial chirality? How is it differ from and planar chirality?
  - What are the applications of Cram's rule?
- What is Pschorr ring closure reaction?
  - Discuss the various factors affecting the stability of carbenes.
  - Discuss the mechanism of Kolbes electrolytic reaction.
- What are non-classical carbocations?
  - Discuss the mechanism of  $S_Ni$  reaction.
  - Discuss the benzyne mechanism.

P.T.O.

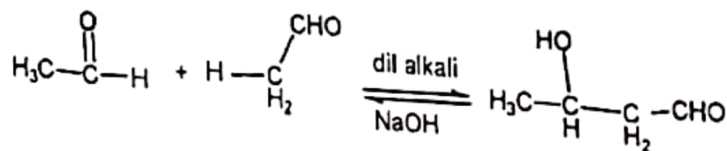


4. (a) What is Prilezhaev reaction?  
 (b) What are the applications of Robinson Annulation?  
 (c) Discuss the stereochemistry of addition of HBr to alkene.
5. (a) What is Lindlar's catalyst? What is its significance?  
 (b) What is Cope elimination?  
 (c) Discuss the effect of substrate structure in elimination reactions.
- (10 × 2 = 20 Marks)

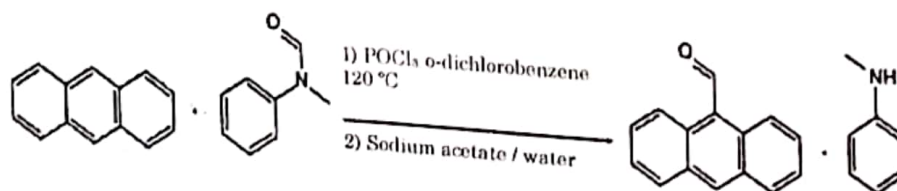
SECTION – B

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

6. (a) By taking an example, describe an organic stereo-selective reaction.  
 (b) What is CD? Discuss its application in assigning configuration.
7. (a) Discuss the mechanism of the following reaction.



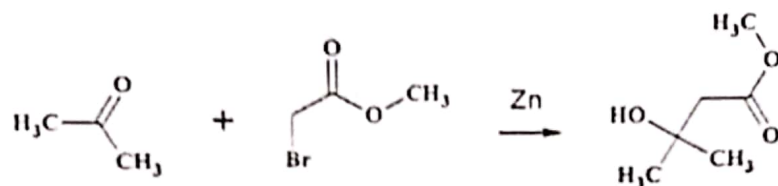
- (b) Discuss the mechanism of Pinacol coupling reaction
8. (a) Discuss the mechanism of the following reaction :



- (b) Briefly explain the effect of groups present in aromatic ring towards further substitution.



9. (a) Explain the mechanism and applications of Michael reaction.  
 (b) Discuss the mechanism of:



10. (a) By taking examples, distinguish between Hoffmann and Saytzeff eliminations.  
 (b) Briefly explain the regioselectivity in elimination reaction.

(5 × 5 = 25 Marks)

### SECTION – C

Answer any three questions. Each question carries 10 marks.

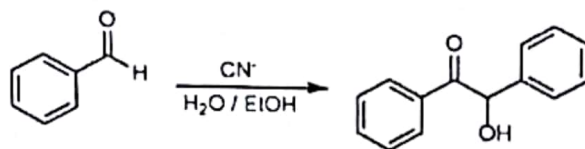
11. (a) Explain the importance of stereochemistry in drug chemistry.  
 (b) Explain the various chiral separation methods. 4 + 6
12. (a) Explain the method of preparation and uses of benzoyl peroxide.  
 (b) Explain the mechanism free radical addition of hydrogen halide. 5 + 5
13. (a) Write down the mechanism of conversion of :



- (b) Compare the properties of  $S_N1$  and  $S_N2$  reactions. 5 + 5



14. (a) Discuss the mechanism and modifications of Knoevenagel condensation.  
(b) Discuss the mechanism of :



15. (a) Discuss the Wittig reaction, its mechanism and stereochemistry.  
(b) Compare E1 and E1cB mechanisms.

(3 × 10 = 30 Marks)