Exam. Code : 107402
Subject Code : 2214

B.Sc. Bio-Technology 2nd Semester

ORGANIC CHEMISTRY—B

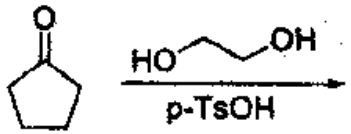
Paper—BT-4

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

Note :— **ALL** questions are compulsory.

1. Alkynes react with ammonical solution of $AgNO_3$ to give a white precipitate but alkenes do not give this reaction. Explain.
2. How will you convert acetylene to 3-octyne ?
3. What are the limitations of Williamson's ether synthesis ?
4. How will you convert ethylene oxide in to 1-Hexanol ?
5. Complete the following reaction with suitable mechanism :

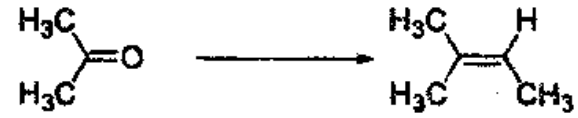


6. What combination of carbonyl compound and ylide would you use to prepare styrene ?
7. Amides are weaker bases than amines, why ?
8. Why acyl chlorides are easily hydrolysed than amides ? 1×8=8

SECTION—B

Note :— Attempt any ***five*** questions. All questions carry equal marks.

9. Alkynes are less reactive than alkenes towards electrophilic addition reactions. Explain.
10. Write down the reaction of but-2-yne with alkali metal in liquid ammonia ? Give its mechanism.
11. Anisole is prepared by the reaction between sodium phenoxide and methyl bromide and not by the reaction between sodium methoxide and bromobenzene.
12. Discuss regioselectivity of ring opening of unsymmetrical oxirane under acidic and basic conditions.
13. Provide suitable conditions for the following conversion and provide a suitable mechanism for it :



14. With mechanism, discuss how will you distinguish between acetaldehyde and benzaldehyde.

15. Write down the base-catalyzed mechanism of hydrolysis of esters.

16. With mechanism, discuss Reformatsky reaction.

5×4=20

SECTION—C

Note :— Attempt any ***two*** questions. All questions carry equal marks.

17. (a) Complete the following reaction and provide a suitable mechanism :

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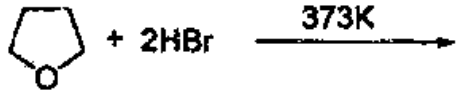
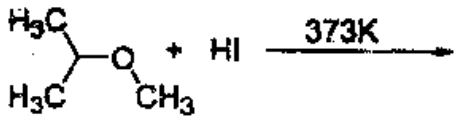
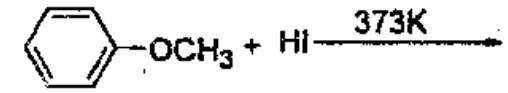
(b) Discuss various factors responsible for the acidity of terminal alkynes. 3

18. (a) Write a note on crown ethers. 3

(b) Complete the following reactions :

(i) 

(ii) 

(iii) 

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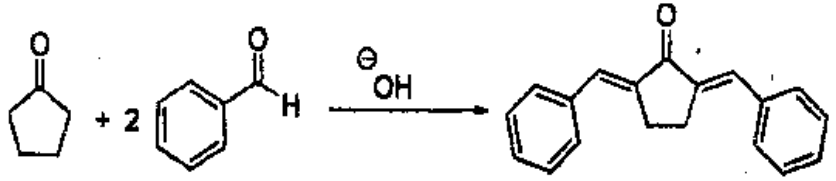
19. (a) Provide a suitable mechanism for the following conversion :



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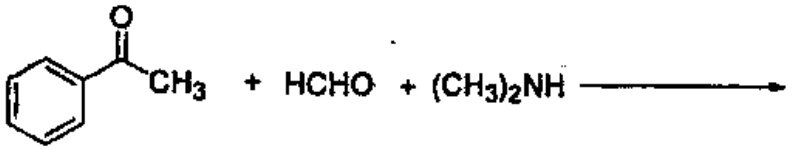
(b) Complete the following reaction and provide a suitable mechanism :



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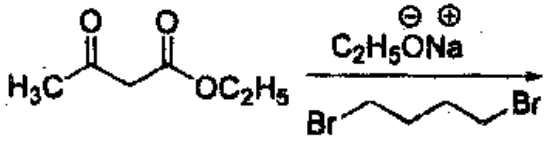
20. (a) Complete the following reaction and provide a suitable mechanism :



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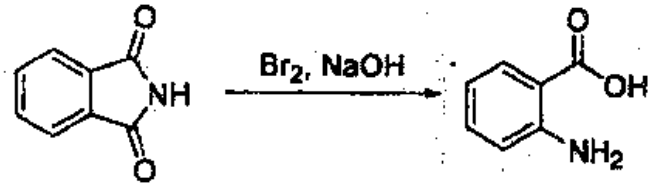
(b) Provide a suitable mechanism for the following conversion :



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