

Exam. Code : 107402

Subject Code : 2273

B.Sc. (Biotechnology) 2nd Semester

ORGANIC CHEMISTRY—B

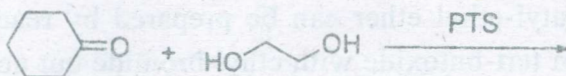
Paper—BT-4

Time Allowed—Three Hours] [Maximum Marks—40

SECTION—A

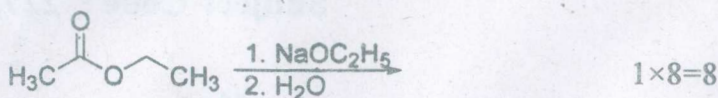
Note :— Attempt ALL the questions. All questions carry equal marks.

1. Although acetylene is acidic in nature, yet it doesn't react with NaOH, why ?
2. How will you convert ethyne to acetaldehyde?
3. Using Williamson's synthesis, how will you synthesize cyclohexylmethyl ether ?
4. Write a short note on crown ether.
5. Aldehydes undergo nucleophilic addition reactions more easily than ketones, explain.
6. Complete the following reaction :



7. Benzoyl chloride gets hydrolyzed at a much slower rate than acetyl chloride, why ?

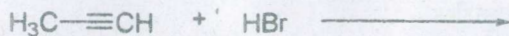
8. Complete the following reaction :



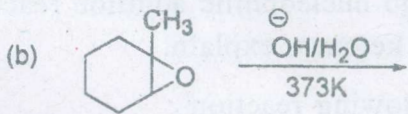
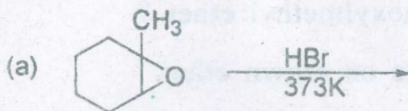
SECTION—B

Note :— Attempt any **FIVE** questions. Each question carries equal marks.

9. Provide the structure and mechanism of following reaction :

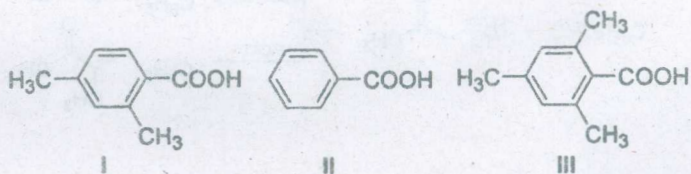


10. Alkynes are less reactive than alkenes towards electrophilic addition reactions. Explain.
11. Predict the products in the following reactions with a suitable mechanism :



12. Tert-butyl-ethyl ether can be prepared by reacting sodium tert-butoxide with ethyl bromide but not by reacting tert-butyl bromide with sodium ethoxide. Why?

13. Explain why in acid catalyzed halogenations of 2-butanone, halogenation preferentially occurs at methylene rather than methyl group ?
14. How would you prepare 2-methyl-2-pentene using Wittig reaction ?
15. Discuss Hofmann bromamide reaction with a suitable mechanism.
16. Arrange the following in decreasing order of acid catalyzed esterification and provide a suitable reason :

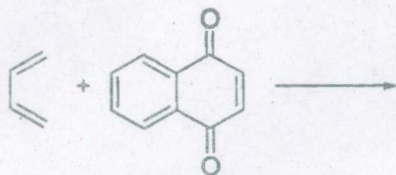


5×4=20

SECTION—C

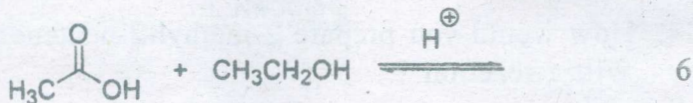
Note :— Attempt any **TWO** questions. Each question carries equal marks.

17. (a) With mechanism, how will you convert but-2-yne to but-2-ene in the presence of Na/liq.NH_3 ? 4
- (b) Complete the following reaction :

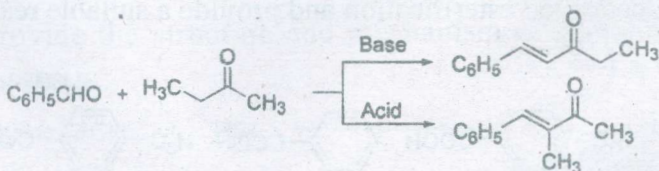


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18. Provide the structure of product along with a suitable mechanism for the following reaction :



19. How do you explain the outcome of following reaction in acidic and basic media :



20. With mechanism, state and explain Dieckmann condensation reaction.