

(i) Printed Pages : 4 Roll No.

(ii) Questions : 9 Sub. Code :

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Exam. Code :

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B.A./B.Sc. (General) 3rd Semester
(2123)

CHEMISTRY

Paper-X : Organic Chemistry-A

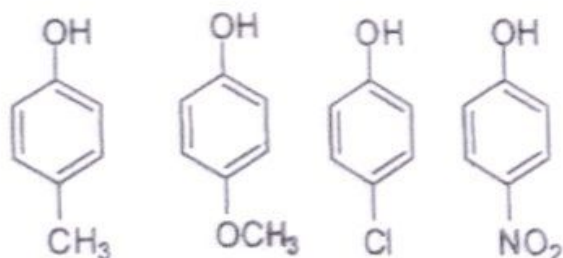
(Same for B.Sc. Microbial & Food Technology)

Time Allowed : Three Hours [Maximum Marks : 22]

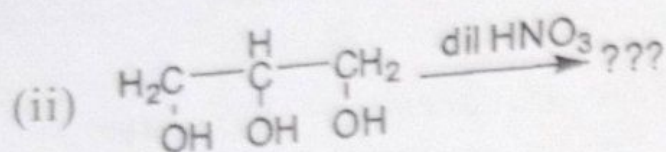
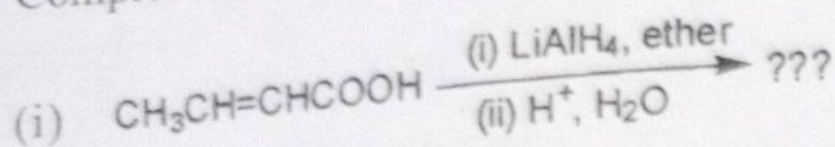
Note :—Attempt FIVE questions in all, including Q. No. 9 (Unit-V) which is compulsory and selecting ONE question from each Unit-I to Unit-IV.

UNIT—I

1. (a) What products will be formed on an acid catalyzed dehydration of 3-methylbutan-2-ol ? Name the major product formed in the reaction. 2
- (b) Arrange the following phenols in the increasing order of their acidic strength and explain reason for same order : 2



2. (a) Complete following reactions :

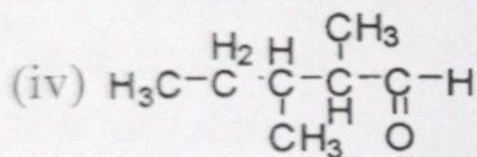
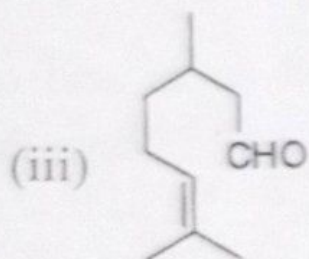
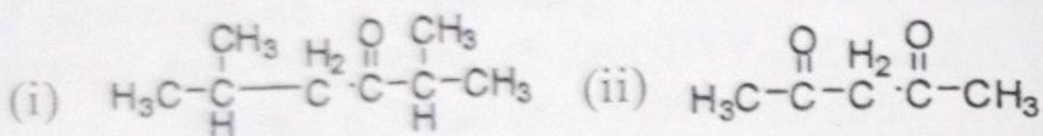


(b) Explain the directive influence of $-\text{OH}$ group in phenol towards electrophilic substitution reactions. 2

UNIT—II

3. (a) Give a brief account of the structure of carbonyl group. 2

(b) Give the IUPAC names for the following compounds :

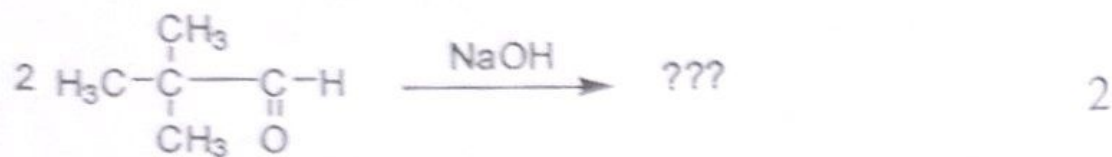


4. (a) Why reaction of Grignard reagent with nitriles is considered to be better method for the preparation of carbonyl compounds as compared to synthesis from acid chlorides ? 2

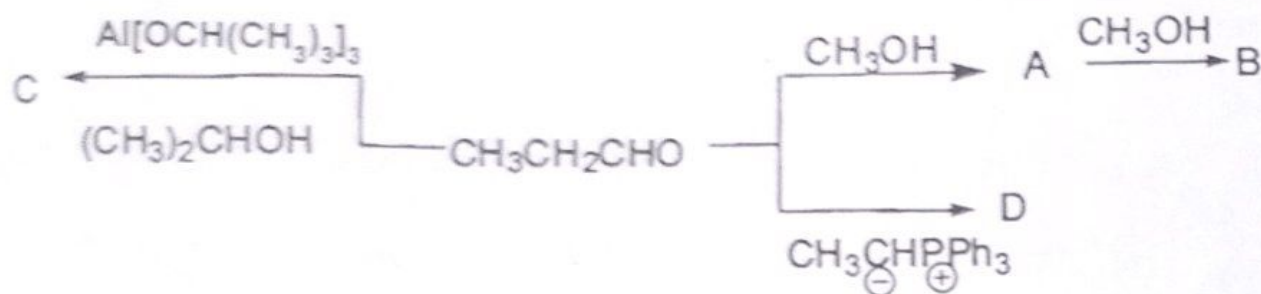
(b) How 1, 3-dithiane could be used for the synthesis of acetone ? Explain with mechanism. 2

UNIT—III

5. (a) Explain with mechanism the product obtained by Baeyer-Villiger rearrangement of 3-methyl-2-hexanone. 2
- (b) Complete following reaction by giving the mechanism :



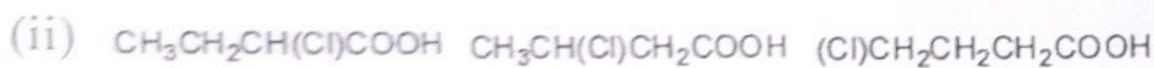
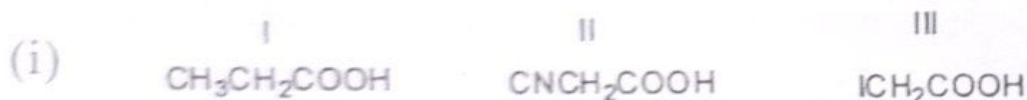
6. What will be the products obtained by the following reactions :



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UNIT—IV

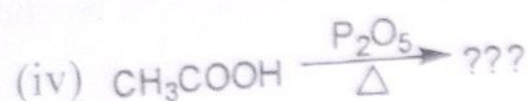
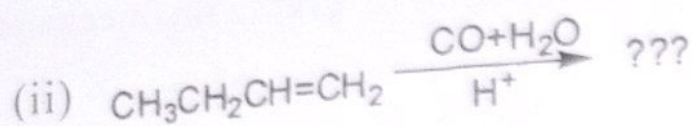
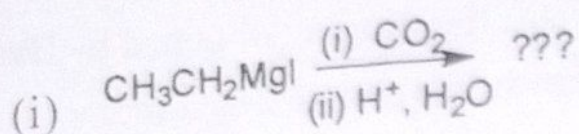
7. (a) Arrange the following acids in increasing order of their acidic strength :



3

- (b) How many optical isomers are possible for tartaric acid ? Explain properly. 1

8. Complete following reactions :



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UNIT—V

9. (a) Why are polyhydric alcohols generally viscous liquids ?
- (b) Why is o-nitrophenol more volatile compared to p-nitrophenol ?
- (c) Why do the carbonyl compounds have lower boiling points compared to alcohols of comparable molecular mass ?
- (d) Among aldehydes and ketones, which is more reactive towards nucleophilic addition reactions and why ?
- (e) Give the order of acidic strength of α , β and γ halo acids.
- (f) Why acid chlorides are the most reactive of acid derivatives ?

1×6=6