

BS/2051
ORGANIC CHEMISTRY-II
(Semester-IV)

Time : Three Hours]

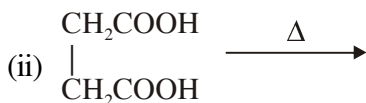
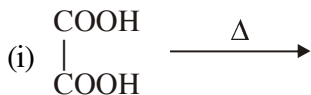
[Maximum Marks : 26

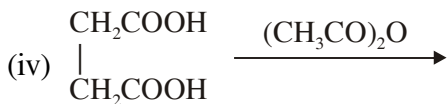
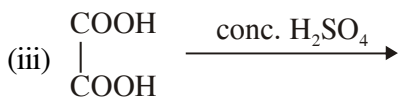
Note : Attempt *five* questions in all, selecting *two* questions each from Section A and B, Section C is compulsory.

SECTION-A

- I. (a) Give *two* methods of preparation of propionic acid.
(b) Write the IUPAC names of the following compounds :
(i) $\text{CH}_3\text{CH}_2\text{CCl}_2\text{COOH}$.
(ii) $(\text{CH}_3)_3\text{CCH}_2\text{COOH}$.
(iii) $\text{CH}_3\text{COCH}_2\text{COOC}_2\text{H}_5$.
(iv) $\text{CH}_3\text{CH}_2\text{COCl}$. (2,2)

- II. (a) Complete the following reactions :





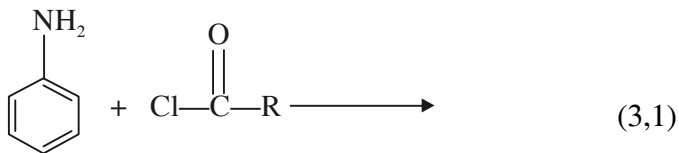
(b) Explain the mechanism of decarboxylation. (2,2)

III. (a) Acetyl chloride is easily hydrolysed by water but benzoyl chloride is not. Explain the reason.

(b) Give the mechanism of esterification. (2,2)

IV. (a) What is the mechanism of nucleophilic aryl substitution? How can you justify the observed order of reactivity of acid derivatives in terms of this mechanism?

(b) Complete the following equation :



SECTION-B

V. (a) Why do ethers have relatively low boiling points as compared to alcohols which are their functional isomers?

(b) Explain the regioselectivity of ring opening of unsymmetrical epoxides in acidic and basic medium.

(1,3)

- VI. (a) Differentiate between edible and non-edible oils.
(b) What is the impact of synthetic detergents on environmental pollution? [2,2]
- VII. What is meant by nitration of aromatic compounds? State the mechanism of the reaction. List at least four nitrating agents and discuss the criteria for the choice of a nitrating agent to be used in a particular case. (4)
- VIII. Discuss the orientation of electrophilic substitution of aniline in terms of relative stability of intermediates formed. (4)

SECTION-C

- IX. (a) How do you explain that CH_3CONH_2 is amphoteric in nature?
(b) How do you justify that boiling point of diethyl ether is somewhat more than that of propane but lesser than that of ethanol?
(c) What is saponification value of a fat? What does it indicate?
(d) Write the structure and IUPAC name of Picric Acid.
(e) Explain why aniline is a weaker base than methylamine? (5×2=10)
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