

COPY RIGHT RESERVED VKS (H-1)-Ch(1) Gr.C 2021

Degree (Part-1) Examination 2021

(Session 2020-23)

B.Sc. (Honours)

CHEMISTRY

Time : Three Hours]

[Maximum Marks : 50

The questions are of equal value. Answer **any five** questions, in which question No. 1 is compulsory.

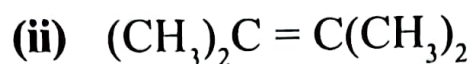
1. Choose the correct answer of the

P.T.O.

following :

[1 × 10 = 10]

(a) A compound which gives acetone on ozonolysis.



(b) In which of the following reactions new carbon-carbon bond is not formed

(i) Cannizaro reaction

(ii) Wurtz reaction

(iii) Aldol condensation

(iv) Friedal - crafts reaction

(c) Reduction of aldehydes and ketones into hydrocarbons by using NH_2NH_2 and NaOH is called

(i) Cope reduction

(ii) Dow reduction

- (iii) Wolf - Kishner reduction
 - (iv) Clemensen reduction
- (d) The reaction of ethyl formate with an excess of CH_3MgI followed by hydrolysis gives
- (i) Ethanol
 - (ii) n-propyl alcohol
 - (iii) Propanal
 - (iv) Isopropyl alcohol
- (e) Lassaigne's extract is made to -
- (i) Convert ionic compound in to covalent compound.
 - (ii) Dissolve the compound
 - (iii) Convert covalent compound into ionic compound
 - (iv) None
- (f) Quantitative measurement of nitrogen in an organic compound is done by the method
- (i) Kjeldahl's method

- (ii)** Lassaigne test
- (iii)** Berthelot method
- (iv)** Belstein method

(g) Long-chain carboxylic acids are known as fatty acids because

- (i)** the molecule is very fatty
- (ii)** fats are ester of higher acid
- (iii)** They have fattening effect
- (iv)** The molecules are first found in natural feet.

(h) Conversion of a carboxylic acid to an ester is known as

- (i)** Reduction
- (ii)** Oxidation
- (iii)** Esterification
- (iv)** Polymerisation

(i) Which of the following has the most acidic hydrogen?

- (i)** hexane-2, 4-dione

(ii) hexane-2, 3-dione

(iii) hexane-2, 5-dione

(iv) hexane-3-one

(j) The product formed in Aldol condensation is

(i) A β -hydroxy aldehyde or a β -hydroxy ketone

(ii) An α -hydroxy aldehyde or ketone

(iii) An α , β unsaturated ester

(iv) A β -hydroxy acid

Group-A

2. (a) Differentiate between meso and racemic compounds [5]

(b) Discuss briefly the structure of ethane, ethene and ethyne in terms of hybridisation. [5]

3. Write the structure of the following compounds : [2× 5 = 10]

(i) 2-Bromo-5-Chlorocyclopentanol.

- (ii) 3,3-Dibromo-2-methyl-2-butanol.
- (iii) 1-Amino-2-methyl-1-phenylpropane.
- (iv) α -hydroxy succinic acid.
- (v) N,N-dimethyl-3-pentanamine.

4. (a) Compare the reactivity of Aniline and Acetanilide. [5]

(b) What alcohols are obtained from the reduction of the following compounds with NaBH_4 . [5]

- (i) 2-methylpropanol
- (ii) Cyclohexanone
- (iii) 4-tert-butylcyclohexanone
- (iv) Acetophenone

Group-B

5. (a) Prepare cinnamic acid by using the Perkin reaction method with a mechanism. [5]

(b) Explain Oppenauer oxidation and Meerwein -

Ponndorf verely (MPV) reduction with a
suitable example [5]

6. Write notes on the following : [10]

(a) Chromatography (b) Synthetic fibres

(c) Soap (c) Aromaticity

7. Write the mechanism for the following name
reactions. [10]

(a) Gabriel - Pthalimide reaction

(b) Canruzaro reaction

8. (a) Explain the reason for the fusion of an organic
compound with metallic sodium for testing

Nitrogen, Sulphur and halogens. [5]

(b) Explain the principle of the silver salt method for
determining the molecular weight of organic

acid. [5]
