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

following : [1× 10 = 10]

(a) A compound which gives acetone on ozonolysis.

(i) $C_6H_5CH = CH_2$

(ii) $(CH_3)_2C = C(CH_3)_2$

(iii) $CH_3–CH = CH–CH_3$

(iv) $CH_3CH = CH_2$

(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 alcohal

(e) Lassiagne'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 fattering 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 structuer of the following compounds : [2× 5 = 10]

(i) 2-Bromo-5-Chlorocyclopentamol.

(ii) 3, 3-Dibromo-2-methyl-2-butanol.

(iii) 1-Amino-2-methyl-1-phenylpropane.

(iv) α -hydroxy succiric 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) Cyclohexanene

(iii) 4-tert-butylcyclohexanone

(iv) Acetophenone

Group-B

5. (a) Prepare cinamic 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]

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