ICSE SEMESTER 2 EXAMINATION

SAMPLE QUESTION PAPER SOLUTIONS CHEMISTRY (SCIENCE PAPER 2)

Section A

Answer 1

i. c. ii. d. iii. a. iv. c. v. d.

vi. a. vii. d. viii. c. ix. d. x. d.

Section B

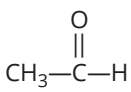
Answer 2

i. a. The isomerism which arises due to different branching of 'C' atom is chain isomerism.

b. An ore is the mineral from which the metal can be extracted profitably.

ii. a. 1,2-dibromoethane

b. Calcium chloride is formed and hydrogen gas is liberated.

iii. a.


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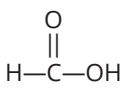

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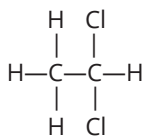


iv. a. $CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$ b. $C_2H_2 + 2Cl_2 \longrightarrow C_2H_2Cl_4$ c. $3CuO + 2NH_3 \longrightarrow 3Cu + 3H_2O + N_2\uparrow$

Answer 3

i. a. Cl^-

b. NO_3^-

ii. a. Calcium oxide

b. NO_2

iii. a. Concentrated hydrochloric acid when reacts with PbO_2 liberates greenish-yellow chlorine gas.

b. Charring occurs.

c. White precipitation occurs which disappears on warming.

iv. a. $CaCl_2 + H_2SO_4 \longrightarrow \underset{\text{(white ppt.)}}{CaSO_4\downarrow} + 2HCl$

b. $2NH_3 + 3CuO \xrightarrow{\Delta} N_2 + 3Cu + 3H_2O$

c. $K_2CO_3 + 2HCl \longrightarrow 2KCl + H_2O + CO_2\uparrow$

Answer 4

i. a. Aluminium is placed higher than carbon in reactivity series so its oxide cannot be decomposed by using carbon. That is why electrolysis is used to decompose Al_2O_3 and obtain pure Al.

b. Graphite is used in high amounts during the electrolytic process of aluminium oxide because graphite anode has to be replaced periodically as the oxygen released oxidizes it.

ii. a. ZnS (zinc blende) b. Duralumin

iii. a. Haber's Process b. Fountain experiment c. Covalent

iv. a. Dilute nitric acid b. Sulphuric acid c. Barium sulphate

Answer 5

i. a. $NaAlO_2 + 2H_2O \xrightarrow[\text{precipitation}]{50\ ^\circ C} NaOH + Al(OH)_3\downarrow$

b. $2Al(OH)_3 \xrightarrow[\text{calcination}]{1000\ ^\circ C} Al_2O_3 + 3H_2O$

ii. a. ammonia

b. nitrogen trichloride

iii. a. Ethyl alcohol

b. Methyl chloride

c. 1,1,2,2-tetrabromoethane

iv. a. Sodium chloride

b. Concentrated nitric acid is volatile and may evaporate along with hydrogen chloride.

c. To avoid the formation of sodium sulphate which fuses with the glass.

Answer 6

i. a. Add a few drops of $AgNO_3$ solution to each sample. The sample that produced a precipitate is HCl and the other sample containing HNO_3 will not react with $AgNO_3$ solution.

The reactions involved are:

$HCl(aq) + AgNO_3(aq) \longrightarrow AgCl(s) + HNO_3(aq)$

$HNO_3 + AgNO_3 \longrightarrow$ No reaction

b. Using barium chloride solution:

Dil H_2SO_4	Dil HCl
$BaSO_4$ and HCl is formed.	No effect.

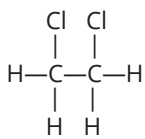
ii. a. Bauxite b. Hydrogenation

iii. A. – b.

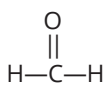
B. – c.

C. – a.

iv. a.



b.



c. Methanal or formaldehyde