



ICSE 2025 SPECIMEN

DRAFT MARKING SCHEME – CHEMISTRY (SCIENCE PAPER 2)

Question 1

[15x1]

- (i) (b) only Q
- (ii) (d) ammonium sulphate
- (iii) (d) 6.023×10^{22} atoms of carbon
- (iv) (d) Both positive and negative ions
- (v) (c) A is true but R is false
- (vi) (b) 2
- (vii) (b) 1
- (viii) (c) be placed at the same position as hydrogen
- (ix) (d) copper nitrate
- (x) (b) 2,8,1
- (xi) (a) Both A and R are true and R is the correct explanation of A
- (xii) (c) 1:10
- (xiii) (d) sodium hydroxide solution
- (xiv) (c) Amphoteric oxides contain a metal
- (xv) (d) (II) and (IV)

Question 2

- (i) (a) (1) reddish brown deposit/ pink deposit/ mass increases
(2) As anode released Copper ions the concentration of copper ions does not decrease
(b) Anode should be made up of Nickel and the electrolyte should be aq. Nickel sulphate or any salt solution of Nickel
(c) $\text{Ag} \rightarrow \text{Ag}^+ + \text{e}^-$
- (ii) (a) 3
(b) 4
(c) 2
(d) 5
(e) 1

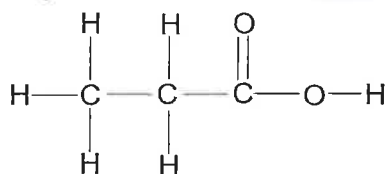
[2+2+1]

[5x1]

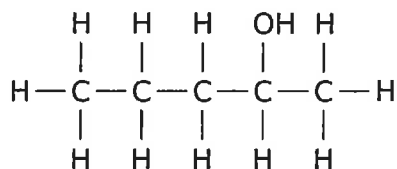
- (iii) (a) largest [5x1]
 (b) hydrochloric acid
 (c) dirty green
 (d) addition
 (e) acidic

- (iv) (a) Coordinate bond [5x1]
 (b) Normal salt
 (c) Substitution
 (d) ionisation potential
 (e) alloy

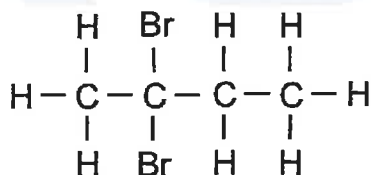
- (v) (a) 1. [3+2]



2.



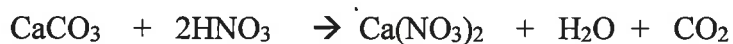
3.



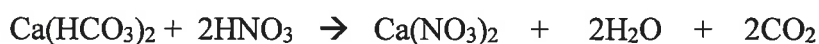
- (b) 1. 1- propanol
 2. pentene/ pent-1-ene

Question 3

- (i) Q is Calcium carbonate/ calcium bicarbonate [2]



or





- (ii) (a) Non volatile property [2]
(b) Oxidising property
- (iii) (a) X has more oxidising power than Y [3]
(b) X will be more electronegative than Y
(c) X will be placed to the right of Y
- (iv) (a) $\text{CuCO}_3 + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O} + \text{CO}_2$ [3]
(b) $\text{Zn} + 2\text{NaOH} \rightarrow \text{Na}_2\text{ZnO}_2 + \text{H}_2$
(c) $2\text{Fe} + 3\text{Cl}_2 \rightarrow 2\text{FeCl}_3$

Question 4

- (i) (a) Cryolite [2]
(b) $\text{Al}^{+3} + 3\text{e}^- \rightarrow \text{Al}$
- (ii) $M = 11.2/56 = 0.2$ [2]
 $N = 4.8/16 = 0.3$
or
 $M:N = 2:3$
Empirical formula is M_2N_3
- (iii) (a) $\text{AlN} + 3\text{H}_2\text{O} \rightarrow \text{Al}(\text{OH})_3 + \text{NH}_3$ [3]
(b) $\text{C} + 4\text{HNO}_3 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O} + 4\text{NO}_2$
(c) $\text{C}_2\text{H}_5\text{Cl} + \text{aq. NaOH} \rightarrow \text{C}_2\text{H}_5\text{OH} + \text{NaCl}$
- (iv) (a) 800°C and Pt [3]
(b) $4\text{NO}_2 + 2\text{H}_2\text{O} + \text{O}_2 \rightarrow 4\text{HNO}_2$

Question 5

- (i) (a) Black copper oxide changes to reddish brown/ pink copper [2]
(b) $\text{CuO} + 2\text{NH}_3 \rightarrow \text{Cu} + 3\text{H}_2\text{O} + \text{N}_2$
- (ii) (a) Bronze [2]
(b) Solder
- (iii) (a) Nitrogen dioxide [3]
(b) Lead ions
(c) Lead nitrate

- (iv) A- Cathode
B- Anode
C- Electrolytic mixture

[3]

Question 6

- (i) 1. c/Al [2]
2. It has 3 electrons in the outer most shell/ valency 3 like that of Al
- (ii) (a) White ppt. [2]
(b) Blue ppt. dissolves to form an inky blue/deep blue solution.
- (iii) (a) Anode; electrons are lost by copper [3]
(b) $\text{Cu} \rightarrow \text{Cu}^{+2} + 2\text{e}^-$
- (iv) (a) Y [3]
(b) 3
(c) Y

Question 7

- (i) Mixture contains 12 lit of propane and 8 lit of butane [3]
Carbon dioxide released by propane is 36 lit
Carbon dioxide released by butane is 32 lit
Total volume of carbon dioxide added to the atmosphere is 68 lit.
- (ii) (a) X [3]
(b) Z
(c) Y
- (iii) (a) 328 g of calcium nitrate liberated 4×22.4 lit of NO_2 [4]
8.2 g of calcium nitrate liberated $4 \times 22.4 \times \frac{8.2}{328} = 0.224$ lit of NO_2
(b) 328 g of calcium nitrate produces 2×56 g of CaO
8.2 g of calcium nitrate produces $2 \times 56 \times \frac{8.2}{328} = 2.8$ g of CaO

Question 8

- (i) (a) No, both will form a white ppt which is soluble in excess of sodium hydroxide [2]
 (b) Yes, white ppt. will be formed with lead nitrate but no ppt. is formed with calcium nitrate/ or no visible reaction



- (iii) (a) $\text{CaC}_2 + 2\text{H}_2\text{O} \rightarrow \text{Ca(OH)}_2 + \text{C}_2\text{H}_2$ [3]
 (b) $\text{CH}_3\text{COOH} + \text{C}_2\text{H}_5\text{OH} \rightarrow \text{CH}_3\text{COOC}_2\text{H}_5 + \text{H}_2\text{O}$
 (c) $\text{NaNO}_3 + \text{conc. H}_2\text{SO}_4 \rightarrow \text{NaHSO}_4 + 2\text{HNO}_3$

- (iv) (a) A and F [3]
 (b) C and E
 (c) $\text{C}_2\text{H}_5\text{OH} \xrightarrow[\text{conc. H}_2\text{SO}_4]{170^\circ\text{C}} \text{C}_2\text{H}_4 + \text{H}_2\text{O}$