

**IGCSE CHEMISTRY P2V2
KEY**

Objective Portion

Marks: 25

1. B
2. C
3. C
4. C
5. B
6. C
7. D
8. A
9. C
10. D
11. C
12. D
13. A
14. D
15. A
16. D
17. C
18. C
19. C
20. A
21. C
22. C
23. A
24. A
25. A

Subjective Part

Q1:

(a) Electroplating improves appearance and prevents corrosion.

(b) Balanced half equation: $2\text{O}^{2-} \longrightarrow \text{O}_2 + 4\text{e}^-$

(c) Sodium ions are reduced at the cathode to form sodium metal, while chloride ions are oxidized at the anode to produce chlorine gas

Q2:

(a)

(i) B. H^+ and Na^+ ions.

(ii) Chloride ions lose electrons to form chlorine gas.

(iii) Use molten sodium chloride electrolyte.

Q3:

(a) 1) Concentrated solution of a strong acid

(b) b. mol/dm^3 hydrogen chloride solution

(c)

1. Accurate pipetting and burette reading.
2. Repeat titration for consistency.

(d) Mass of ethane dioic acid = 1.08 g

(e) Concentration of sodium hydroxide = 0.0576 mol/dm^3

Q4:

(a) Test: Bromine water.

Result: Decolorization indicates a double bond.

(b) Percentage by mass of chlorine $\approx 48.3\%$.

Practical Questions

Q1:

(a) Coagulation/clumping of particles and filtration.

Rationale:

- Enhances settling.
- Ensures cleaner water.

(b) (i) Ion exchange resin or zeolite.

(d) Provides essential minerals.

Q2:

(a)

(i) Solids.

(ii) Chlorine.

(b) Conductivity detects dissolved salts.

(c) Water molecules pass through pores, while ions are too large.

Q3:

Soft drinks A, B, C, and D contain safe colors, as indicated by the chromatography results.

Q4:

To make pure copper sulfate crystals:

- Set up the flask, condenser, burner, stand, mat, rod, paper, and funnel.
- Add copper carbonate to the flask and pour sulfuric acid into it.
- Heat gently then cool, and filter to remove impurities.
- 6. Keep filtrate (copper sulfate solution).
- 7. Put the solution in an evaporating dish.
- 8. Gently heat to remove water.
- 9. Copper sulfate crystals will form. Cool and collect them.