

**IGCSE CHEMISTRY P2V3  
KEY**

**Objective Portion**

**Marks: 25**

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

**Theoretical Portion****Marks: 45****Q1:****(a)**

- (i) Toxicity of chlorine gas.
- (ii) Pungent odor.
- (iii) Water treatment.

**(b)**

- Longer time and higher current increase gas volumes.
- Hydrogen-oxygen ratio remains constant.
- Time affects total gas volume; current affects gas production rate.

**Q2:**

- (i)  $\text{Ag}^+(\text{aq}) + \text{e}^- \rightarrow \text{Ag}(\text{s})$  (reduction).
- (ii) Voltage drops due to internal resistance and polarization.
- (iii) Copper atoms disrupt aluminum lattice, boosting strength.

**Q3:****(a)** Cracking.**(b)** High temperature and catalyst.**(c)** High temperature, moderate pressure, and catalyst.**(d)** Warm temperature, anaerobic conditions, pH control, and nutrients.

**Practical Portion****Marks: 30****Q1:**

(i) Chromatography.

(ii) Three distinct colors are present in the food.

(iii) The food does not contain quinoline yellow (E104) because only two colors were observed.

**Q2:**

(i)

- Add hydrochloric acid to a flask and place magnesium into it.
- After the completion of the reaction, filter the solution.
- Transfer the filtrate to an evaporating dish.
- Evaporate the water gently.
- Collect the magnesium chloride crystals formed.

Apparatus: Gas syringe

**Q3:**

Gas volume stopped changing after 210 seconds due to the reaction completion, exhausting available carbonate.

**Q4:**

(a) 31°C.

(b)

(i) Mixing and volume measurement inaccuracies.

(ii) Introduces systematic error due to different heat conduction rates.