Q1.

Which species is **never** formed during the reactions of chlorine with water?

A Chloride ions ○

B Chlorate(I) ions ○

C Hydrogen ○

D Oxygen ○

(Total 1 mark)

Q2.

Which of these solid sodium halides does **not** reduce concentrated sulfuric acid?

A NaAt ○

B NaBr ○

C NaCl ○

D NaI ○

(Total 1 mark)

Q3.

Which statement correctly describes a trend down Group 7 from Cl to I?

X represents Cl, Br or I

A The boiling point of HX increases. ○

B The bond dissociation energy of H–X increases. ○

C The standard electrode potential value for $X_2(aq) + 2\ e^- \longrightarrow 2\ X^-(aq)$ becomes more positive. ○

D The solubility of AgX in ammonia increases. ○

(Total 1 mark)

Q4.

Which statement about chloride ions is correct?

A They are oxidised by concentrated sulfuric acid. ○

B They form a cream precipitate with silver nitrate solution. ○

C They form a cobalt(II) complex with a tetrahedral shape. ○

D They have the electron configuration $1s^2 2s^2 2p^6 3s^2 3p^4$ ○

(Total 1 mark)

Q5.

Which species is the strongest reducing agent?

A F_2 ○

B I_2 ○

C F^- ○

D I^- ○

(Total 1 mark)

Q6.

Which statement is correct?

A Chloride ions reduce concentrated sulfuric acid to form sulfur dioxide. ○

B Bromide ions reduce concentrated sulfuric acid to form sulfur. ○

C Bromide ions reduce iodine to form iodide ions. ○

D Iodide ions reduce chlorine to form chloride ions. ○

(Total 1 mark)

Q7.

Which is a correct trend down Group 7 from fluorine to iodine?

A The boiling point of the element decreases. ○

B The oxidising ability of the element decreases. ○

C The electronegativity of the atom increases. ○

D The first ionisation energy of the atom increases. ○

(Total 1 mark)

Q8.

Which species is **not** a possible product of the reactions between chlorine and water?

A Cl^- ○

B ClO^- ○

C O_2 ○

D OH^- ○

(Total 1 mark)

Q9.

A test for chloride ions in aqueous solution involves adding dilute nitric acid followed by aqueous silver nitrate.

What is the reason for adding the nitric acid?

A To convert $AgNO_3$ into $[Ag(NO_3)_2]^-$ ○

B To decrease the solubility of silver chloride ○

C To increase the pH of the solution ○

D To prevent the precipitation of other silver compounds ○

(Total 1 mark)