Practice Question Set For A-Level
Subject : Chemistry
Paper-1 Topic: Inorganic 1

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Name of the Student:_____
Max. Marks : 18 Marks **Time : 18 Minutes**

Mark Schemes

Q1.

(a) **A** Silver bromide / AgBr

1

B Iron(II) carbonate / $FeCO_3$

1

C Iron(II) sulphate / $FeSO_4$

1

D Carbon dioxide / CO_2

1

Y Iron(II) bromide / $FeBr_2$

1

(b) $Ag^+ + Br^- \longrightarrow AgBr$

Allow equation if state symbols missing but penalise if state symbols are incorrect

1

(c) $2H^+ + CO_3^{2-} \longrightarrow H_2O + CO_2$

Allow $FeCO_3 + 2H^+ \longrightarrow Fe^{2+} + CO_2 + H_2O$

1

[7]

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Q2.

(a) $2NaBr + 2H_2SO_4 \longrightarrow Na_2SO_4 + Br_2 + SO_2 + 2H_2O$

Allow ionic equation

$2Br^- + 2H_2SO_4 \longrightarrow Br_2 + SO_4^{2-} + SO_2 + 2H_2O$

1

Br^- ions are bigger than Cl^- ions

1

Therefore Br^- ions more easily oxidised / lose an electron more easily (than Cl^- ions)

1

(b) This question is marked using levels of response. Refer to the Mark Scheme Instructions for Examiners for guidance on how to mark this question.

Level 3

All stages are covered and the explanation of each stage is generally correct and virtually complete. Stages 1 and 2 are supported by correct equations.

Answer communicates the whole process coherently and shows a logical progression from stage 1 to stage 2 and then stage 3. The steps in stage 3 are in a logical order.

5–6 marks

Level 2

All stages are covered but the explanation of each stage may be incomplete or may contain inaccuracies OR two stages are covered and the explanations are generally correct and virtually complete.

Answer is mainly coherent and shows a progression through the stages. Some steps in each stage may be out of order and incomplete.

3–4 marks

Level 1

Two stages are covered but the explanation of each stage may be incomplete or may contain inaccuracies, OR only one stage is covered but the explanation is generally correct and virtually complete.

Answer includes some isolated statements, but these are not presented in a logical order or show confused reasoning.

1–2 marks

Level 0

Insufficient correct chemistry to warrant a mark.

0 marks

Indicative chemistry content

Stage 1*: formation of precipitates*

- *Add silver nitrate*
- *to form precipitates of AgCl and AgBr*
- $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$
- $AgNO_3 + NaBr \rightarrow AgBr + NaNO_3$

Stage 2*: selective dissolving of AgCl*

- *Add excess of dilute ammonia to the mixture of precipitates*

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- *the silver chloride precipitate dissolves*
- *$AgCl + 2NH_3 \rightarrow Ag(NH_3)_2^+ + Cl^-$*

***Stage 3**: separation and purification of AgBr*

- *Filter off the remaining silver bromide precipitate*
- *Wash to remove soluble compounds*
- *Dry to remove water*

6

(c) $Cl_2 + 2HO^- \longrightarrow OCl^- + Cl^- + H_2O$

1

OCl^- is +1

Cl^- is –1

Both required for the mark

1

[11]

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