Practice Question Set For A-Level
Subject : Chemistry
Paper-1 Topic: Inorganic 2

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Name of the Student:_____
Max. Marks : 16 Marks **Time : 16 Minutes**

Mark Schemes

Q1.

(a) Incomplete (or partially filled) d orbitals/sub-shells
Do not allow d shell
1

(b) Variable oxidation states
1

(c) (i) $[H_3N–Ag–NH_3]^+$
Allow $[Cl–Ag–Cl]^-$ or similar Cu(I) ion
Allow compounds in (i), (ii) and (iii) (eg Cl-Be-Cl)
Allow no charge shown, penalise wrong charge(s)
1

(ii) Cis platin drawn out as square planar
Allow NiX_4^{2-} etc
1

(iii) $[CuCl_4]^{2-}$ drawn out as tetrahedral ion
Or $[CoCl_4]^{2-}$ drawn out
1

(d) (i) $SO_2 + 1/2O_2 \rightarrow SO_3$
Allow multiples
Allow $SO_2 + 1/2O_2 + H_2O \rightarrow H_2SO_4$
ignore state symbols
1

(ii) In a different phase/state (from the reactants)
1

(iii) $V_2O_5 + SO_2 \rightarrow V_2O_4 + SO_3$
can be in either order
1

$V_2O_4 + 1/2O_2 \rightarrow V_2O_5$
allow multiples
1

(iv) Surface area is increased
1

By use of powder or granules or finely divided
Allow suspending/spreading out onto a mesh or support

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1

(e) (i) Forms two or more co-ordinate bonds

Allow more than one co-ordinate bond or donates more than 1 electron pair.

Do not allow "has more than one electron pair"

Allow uses more than one atom to bond (to TM)

1

(ii) Number of product particles > Number of reactant particles

Allow molecules/entities instead of particles

Penalise incorrect numbers (should be 2→5)

1

Disorder increases or entropy increases
(or entropy change is positive)

Allow ΔG must be negative because ΔH = 0 and ΔS is +ve

1

(iii) 6

1

Cyanide strongly bound to Co (by co-ordinate/covalent bond)

1

[16]

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