

28 Transition elements – Part 1 — Answers

Answers

Work through these after trying the questions yourself.

28.1 A d-block element that forms one or more stable ions with incomplete d orbitals.

28.2 Any two of: variable oxidation states, catalysts, complex ions, coloured compounds.

28.3 Fe^{2+} and Fe^{3+} (for example).

28.4 The 3d and 4s sub-shells are close in energy.

28.5 Coloured (many different colours).

28.6 A transition element must form at least one ion with an *incomplete* d sub-shell. Zinc's only ion, Zn^{2+} , has a *full* d sub-shell (d^{10}), so it fails the definition. It also has only one oxidation state and forms colourless (not coloured) compounds.