Oxidation Numbers Worksheet

Scoring guide · one credit per question · review written work against each rubric

Oxidation Numbers

Question 1

Choice (2)

An element in its elemental form has oxidation number zero.

Question 2

Three oxygen atoms contribute 3(−2) = −6. Two iron atoms must contribute +6 total, so each Fe is +3.

Question 3

Choice (3)

Two chloride ions contribute −2 total, so iron contributes +2 in the neutral compound.

Question 4

Iron is reduced. Its oxidation number decreases from +3 to +2 as it gains one electron.

Iron Compound Labels

Question 5

Choice (3)

Fe is +3 in Fe_2O_3 and $FeCl_3$. It is +2 in FeO.

Question 6

For neutral $FeCl_3$, let iron be x. Then x + 3(−1) = 0, giving x = +3.

Question 7

Choice (1)

Fe is +2 in FeO and +3 in Fe_2O_3.

Question 8

The three oxygen atoms require +6 total to balance their −6. Two Fe atoms share the +6 total, so the oxidation number is +3 per Fe.