Following Iron Ions Through a Color Cycle

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

Following Iron Ions Through a Color Cycle

Question 1

Choice (2)

The Fe^{2+} amount decreases and Fe^{3+} increases. Raising the ionic charge from +2 to +3 corresponds to losing one electron.

Question 2

Fe^{3+} falls from 7.0 to 4.0 mmol. Each ion that becomes Fe^{2+} accepts one electron, so 3.0 mmol of electrons are accepted.

Question 3

The total is 10.0 mmol at each stage. After step 2 there are 4.0 mmol Fe^{3+} instead of 2.0 mmol. The indicator responds to how much iron is Fe^{3+}, not to the total amount.

Question 4

Reduce another 2.0 mmol Fe^{3+} to Fe^{2+} by supplying one electron per ion. The amounts become 8.0 mmol Fe^{2+} and 2.0 mmol Fe^{3+} again.