Counting Oxygen Atoms in an Ozone Model

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

Counting Oxygen Atoms in an Ozone Model

Question 1

Choice (3)

Both formulas contain only O. The models assign two atoms to O_2 and three to bent O_3.

Question 2

The left side has 3 × 2 = 6 oxygen atoms. The right side has 2 × 3 = 6. A coefficient counts molecules, while the subscript counts atoms per molecule.

Question 3

U has 9 × 2 + 2 × 3 = 24 oxygen atoms, matching the original 12 × 2. V has 10 × 2 + 1 × 3 = 23 oxygen atoms. U conserves the atoms even though both drawings show 11 molecules.

Question 4

Each bent three-atom group is one O_3 molecule. U has two such molecules, while V has one. The meter that counted all molecules together could not make that distinction.