Intermolecular Forces and Solubility Worksheet

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

Intermolecular Forces and Solubility

Question 1

Choice (1)

Polar solute and solvent molecules can form favorable attractions with one another.

Question 2

The partially negative oxygen end can orient toward the positive ion. The resulting ion–dipole attractions help stabilize the ion in water.

Question 3

Choice (2)

Limited favorable interactions between water and the nonpolar liquid can lead to separate layers.

Question 4

The rule predicts a tendency. An exact amount also depends on the specific interactions, temperature, and other conditions, so numerical data or a model is needed.

Comparing Model Solute–Solvent Pairs

Question 5

Choice (1)

The largest table entry is 30 g per 100 g for P in water.

Question 6

24 g − 2 g = 22 g more per 100 g of solvent.

Question 7

Choice (2)

Q is nonpolar and dissolves to 24 g per 100 g in the nonpolar solvent, compared with 2 g per 100 g in water.

Question 8

P dissolves to 4 g per 100 g in the nonpolar solvent. The lower solubility still allows a measurable amount to dissolve.