Heat of Vaporization Worksheet

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

Heat of Vaporization

Question 1

Choice (3)

Multiply 2.00 g by 2,260 J/g to get 4,520 J.

Question 2

m = q/Hv = 11,300 J ÷ (2,260 J/g) = 5.00 g.

Question 3

Choice (2)

Condensation transfers energy from the sample to its surroundings as vapor becomes liquid.

Question 4

The energy overcomes intermolecular attractions as particles separate into vapor. The temperature stays constant while the phases coexist.

Heating Samples at 1 atm

Question 5

Choice (2)

At the boiling point, 10.0 g × 2,260 J/g = 22,600 J. Q receives this amount.

Question 6

P starts at the boiling point, so 11,300 J ÷ (2,260 J/g) = 5.00 g vaporizes.

Question 7

Warming R by 10.0 °C takes (10.0 g)(4.18 J/(g·°C))(10.0 °C) = 418 J. This equals the supplied energy, so no heat remains for phase change.

Question 8

Choice (3)

Condensation releases the same magnitude of energy that vaporization absorbed for the same mass, 11,300 J.