Checking a Float With a Compressed Pocket

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

Checking a Float With a Compressed Pocket

Question 1

Choice (3)

The deeper total volume is 14 mL, compared with 20 mL at the shallower test point.

Question 2

At the deeper point the fully submerged float displaces 14 mL of water with mass 14 g. Its own mass is 15 g, so it sinks in the model.

Question 3

The sealed float keeps the same mass. Pressure compresses the pocket from 12 to 6 mL and reduces the displaced water, which accounts for the result without water entering.

Question 4

It needs at least 15 mL of total volume there. The body supplies eight, leaving seven for the compressed pocket. The shallow pocket must therefore be at least 14 mL.