Checking Where Light Is Absorbed in a Stack

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

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Question 1

Choice (2)

The sample in Q receives all 80 units first. In P the filter passes only 40 units to the sample.

Question 2

P gives 80 × 1/2 × 1/4 = 10 units. Q gives 80 × 1/4 × 1/2 = 10 units.

Question 3

The sample absorbs three quarters of what reaches it. It absorbs 30 units of the 40 reaching it in P, and 60 of the 80 reaching it in Q. Equal final readings leave the location of the absorption unresolved.

Question 4

P’s sample absorbs 30 on the first pulse, below the 50-unit threshold. P still transmits 80 × 1/2 × 1/4 = 10 units. Q’s sample absorbs 60 on the first pulse, so Q now transmits 80 × 1/2 × 1/2 = 20 units.