Dating Buried Wood Beneath a Mill

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

Dating Buried Wood Beneath a Mill

Question 1

The curve reaches 25% at 11.46 thousand years, so the model age is about 11,460 years. The fraction also represents two half-lives of 5,730 years.

Question 2

Choice (3)

The product has atomic number 7, which identifies nitrogen, and mass number 14.

Question 3

The old component contributes (0.90)(25%) = 22.5 percentage points. The recent component contributes (0.10)(100%) = 10 percentage points. The expected mixture is 32.5% of the living-wood level.

Question 4

It appears younger. The second piece has a higher measured percentage because of the recent fibers; the curve has higher percentages at shorter elapsed times.

Question 5

The age estimates when that wood stopped exchanging carbon. Buried wood can predate construction or have no connection to the mill. A link between the sample and the construction event would require additional evidence.