

Analytical Measurement Uncertainty Quiz

Passing score = 80%

Select the correct answer.

1. T F Customers will never ask for measurement uncertainty.
2. T F The reference points of measuring are the units of measurement, the raw number, corrected results, and averages.
3. T F A measurand is the same as the substance you are measuring, in other words, the analyte.
4. T F The True Value is always known.
5. T F Uncertainty is error in measurement.
6. T F Measurement uncertainty includes the doubt that exists about the result of any measurement.
7. T F Roughly 95% of all readings lie within 2 Standard deviations on either side of the mean.
8. T F Uncertainty will be reported in the same unit as the analytical result.
9. Measurement:

A. Is a set of operations that determine the value of a quantity	B. Tells us about a property of something (i.e., how heavy, hot, or long an object is)	C. A & B	D. Neither A nor B
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10. Precision is when:

A. The measurement repeats itself	B. Every measurement value is close to the true value, but the same measurement is not repeated again and again	C. Instruments give the same answer over and over again	D. A and C
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11. Which is the best way to calculate uncertainty?:

A. Use proficiency test samples	B. Perform according to your standard test method	C. Use standard deviation of long-term data collected from routine sample runs.	D. Utilize duplicate data
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12. Match the correct term and definition: A. Measurand B. Standard deviation C. True Value D. Accuracy

___ Actual amount of the analyte in a sample	___ The ability of an instrument or testing process to repeat readings close to the true value of an analyte	___ The particular quantity of the substance being measured, including the unit of measure and the matrix, e.g., "mg of lead in a cubic meter of air"	___ A mathematical formula used to calculate the average distance that values in a set differ from the set's mean.
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13. Match the term with the correct meaning: A. Type A uncertainty B. Standard deviation C. Confidence level D. Offset

___ The spread of numbers in a set

___ A scale not set to zero

___ Uncertainty evaluated by statistical methods

___ The likelihood (expressed as a percentage) that the results of a test are real and repeatable, and not just random

