

Laboratory Quality Control, Statistics, and Measurement Uncertainty Pre-Assessment

1. Which of the following best defines a quality assurance plan?
 - a. The best procedures and processes that deliver quality products for a laboratory.
 - b. The overall strategy and goals that make a successful laboratory.
 - c. The plan, direction, and programs that produce the desired laboratory quality.
 - d. The data quality objectives that produce the results for a laboratory customer.

2. T or F – Laboratory Quality Control is another title for Laboratory Quality Assurance.
 - a. T
 - b. F

3. T or F - Laboratory quality is affected by laboratory safety.
 - a. T
 - b. F

4. Typically, a quality control sample is analyzed _____.
 - a. by itself to avoid interferences
 - b. with a batch of samples
 - c. in duplicate to ensure accurate results
 - d. only when a customer requests it

5. A data mean is also called the _____.
 - a. accuracy measurement
 - b. center point
 - c. average
 - d. best guess

6. An analysis blank measures _____.
 - a. calibration points
 - b. instrument quality
 - c. human performance quality
 - d. cross-contamination

7. T or F - QC charts are used to visually represent the quality checks.
 - a. T
 - b. F

8. Quality Control samples are _____.
 - a. analyzed separately
 - b. included with every batch of samples
 - c. analyzed with greater care
 - d. reviewed and approved by an external team

9. The standard deviation of a data set determines its _____.
 - a. average
 - b. reproducibility
 - c. precision
 - d. accuracy

10. Which of the following can cause inconsistent results?
 - a. human error
 - b. instrument malfunctions
 - c. procedure issues
 - d. all the above

11. Which of the following error types is expected?
 - a. trend
 - b. systemic
 - c. shift
 - d. random

12. Trends are usually _____.
 - a. subtle
 - b. downward
 - c. abrupt
 - d. upward

13. Trends in data move typically move _____ the centerline.
- away from
 - toward
 - parallel to
 - a or b
14. A shift in data usually occurs _____.
- over time
 - regularly
 - after procedure changes
 - abruptly
15. Training for laboratory technicians should include:
- Classroom and on-the-job training
 - Classroom and practice time
 - Required reading and practice time
 - On-the-job training only
16. T or F – Measurement uncertainty is best calculated using all errors possible.
- T
 - F