

## Controls and Control Charting Quiz

Passing score = 80%

Select the correct answer.

1. T F The ISO/IEC 17025 Standard requires that the laboratory have procedures for monitoring the quality of test results.
  2. T F A laboratory may not use the same QC over and over again to create a control chart.
  3. T F An optimal QC sample is one that is the same, or similar, matrix as the test materials and has a value of the analyte close in range to the expected results.
  4. T F The mean value is used to calculate the upper and lower control limits.
  5. T F The x-axis on a control chart is used to delineate time.
  6. T F When creating a control chart mean using a spiked sample, only one analysts should be used.
  7. T F The upper control limit is calculated by multiplying the standard deviation by three and adding this result to the mean.
  8. T F The lower warning limit is calculated by multiplying the standard deviation by three and subtracting this result from the mean.
  9. T F Control charts can never be used by the laboratory for trend analysis.
10. The following may be used to monitor a laboratory's test results for validity:
- |                                 |                        |              |                     |
|---------------------------------|------------------------|--------------|---------------------|
| A. Certified reference material | B. Proficiency testing | C. Retesting | D. All the choices. |
|---------------------------------|------------------------|--------------|---------------------|
11. When quality control data is found to be outside of the laboratory's predefined criteria:
- |                                                                       |                                                                                                      |                                                                                   |                                                                |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------|
| A. Quality control is repeated until acceptable results are achieved. | B. Planned action is taken to correct the problem and prevent incorrect results from being reported. | C. Instruments used in the analyses are to have preventive maintenance performed. | D. All results from that batch of samples are to be destroyed. |
|-----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------|
12. QC samples used for control charting can be:
- |                                                        |                                                 |                                              |                        |
|--------------------------------------------------------|-------------------------------------------------|----------------------------------------------|------------------------|
| A. Reference material or certified reference material. | B. Old PT samples (with associated statistics). | C. A sample characterized by the laboratory. | D. All of the choices. |
|--------------------------------------------------------|-------------------------------------------------|----------------------------------------------|------------------------|
13. A control chart contains all of the following except:
- |                                                |          |                         |                  |
|------------------------------------------------|----------|-------------------------|------------------|
| A. Exponential value of the standard deviation | B. Mean. | C. Upper control level. | D. Plotted data. |
|------------------------------------------------|----------|-------------------------|------------------|

14. Control chart statistics are reviewed:

- A. Only by the laboratory's QA manager.
- B. Annually.
- C. At intervals set by the laboratory's QMS.
- D. Daily

15. A laboratory's process is considered (statistical) out of control when:

- A. When one quality control point falls outside of the upper or lower control limits
- B. Indicated by the laboratory's QMS
- C. One quality control point falls outside of the upper or lower warning limits.
- D. A series of quality control points fall above or below the mean.

16. Qualitative analysis (presence/absence):

- A. Never need to be evaluated for trends.
- B. Never have values that can be control charted.
- C. May have control charts associated with them per the laboratory's QMS.
- D. Always have skewed control charts.

