

CEM 515 SPC quiz Student name: _____ Student No _____

1. A process which is in statistical control will.
 - a. Produce product to specification.
 - b. Consistently produce product which, when charted, will fall within statistical controls limits.
 - c. Both on the above

2. You are plotting a control chart and the last two of three parts are greater than 2 , four out of the last five point are beyond readings are beyond 1 σ and eight successive points are on one side of the center line ; you should
 - a. Stop the process immediately.
 - b. Take more
 - c. Do nothing since no piece was out of spec limit
 - d. Write discrepancy notice to the supervisor
 - e. Investigate to determine what has changed

3. For the normal probability distribution, the relationships among the median, mean and mode are that:
 - a. They are all equal to the same value
 - b. The mean and mode have the same value but the median is different
 - c. Each has a value different from the other two
 - d. The mean and median are the same but the mode is different

4. The spread of individual observations from a normal process capability distribution may be expressed numerically as:
 - a. $6R/d_2$
 - b. $2xA_2R$
 - c. R/d_2
 - d. D_4

5. A number derived from sample data, which describes the data in some useful way,
 - a. Constant
 - b. Statistic
 - c. Parameter
 - d. Critical value

6. The prime use of a control chart is to:
- Detect assignable causes of variation in the process
 - Detect non conforming product
 - Measure the performance of all quality characteristics of process
 - Detect the presence of random variation in the process
7. An X- bar and R chart was prepared for an operation using twenty samples with five pieces in each sample X-bar was found to be 33.6 and R-bar was 6.20. During production, a sample of five was taken and the pieces measured 36, 43, 37, 25, and 38. At the time, this sample was taken:
- Both average and range were within control limits
 - Neither average nor range were within control limits
 - Only average was outside control limits
 - Only the range was outside control limits
8. Calculate the standard deviation of the population for the following set of five sample observation:
1.5, 1.2, 1.1, 1.0, 1.6
- 1.280
 - 0.259
 - 0.231
 - 0.518
9. Variance is:
- The difference between actual and assumed values
 - Equal to 1.0 in most normal distributions
 - The square root of the standard deviation
 - The square of the standard deviation
 - The standard error of the mean
10. Which one of the following best describes machine capability?
- The total variation of all activities of a mold, cavities of a die cast machine or spindles of an automatic assembly line.
 - The inherent variation of the machine
 - The total variation over a shift.
 - The variation in a short run of consecutively produced parts