

Quality Questions

41. Variation that is inherent in a production process itself is called common variation.
- A) True
 - B) False
42. If the fraction defective is 0.12 based on a sample size of 16, the standard deviation used in the “p” chart is about 0.08.
- A) True
 - B) False
43. Quality characteristics that are classified as either conforming or not conforming to specifications are considered to be attribute measurements.
- A) True
 - B) False
44. A quality control chart has upper and lower control limits expressed as lines on a chart. As long as the sample values fall between these two lines there is no need to investigate process behavior.
- A) True
 - B) False
45. Six Sigma is a version of Total Quality Management created by Motorola and popularized by General Electric.
- A) True
 - B) False
46. For which of the following should we use a “p” chart to monitor process quality?
- A) The dimensions of brick entering a kiln
 - B) Lengths of boards cut in a mill
 - C) The weight of fluid in a container
 - D) Grades in a freshman “pass/fail” course
 - E) Temperatures in a classroom
47. Before calculating process capability, assignable variation (also called “special cause” variation) should be investigated and removed from the process if possible.
- A) True
 - B) False
48. A process capability index that indicates the process is capable at six sigma level is:
- A. Less than 1.0
 - B. Greater than 1.0 but less than 1.33
 - C. Greater than 1.33 but less than 1.67
 - D. Greater than 1.67 but less than 2.0
 - E. Greater than 2.0

49. A part has a length specification of 5 inches with tolerances of $\pm .004$ inches. The current process has an average length of 5.001 inches with a standard deviation of .001 inches.

Calculate the C_{pk} for this process.

- A) 1.00
- B) 1.09
- C) 1.45
- D) 1.67
- E) 1.99

50. A manufacturing company uses a production process that mills components to an average thickness of .005 inch, with an average range of .0015 inch. Using samples of size 3, what is the upper control limit on the X-bar chart?

- A) 0.001
- B) 0.002
- C) 0.003
- D) 0.005
- E) 0.007

<u>Sample Size</u>	<u>A2</u>	<u>D3</u>	<u>D4</u>
2	1.88	0	3.27
3	1.02	0	2.57
4	0.73	0	2.28
5	0.58	0	2.11
6	0.48	0	2.00