

Latest Version: 6.0

Question: 1

In response surface analysis, which of the following values for s and t weights would indicate that the target value and the boundaries are equally important?

- A. -3
- B. 0
- C. 1
- D. 0.7

Answer: B

Explanation:

In phase 2 of response surface analysis, the s and t weights are based on the relationship between the target and the boundary. When the target and the boundary have equal value, the s and t weights are 0. When the target is more important than the boundary, the t weight is between 0.1 and 1.

Question: 2

Which of the following would be considered a value-added activity?

- A. Design
- B. Delivery
- C. Marketing
- D. Manufacturing

Answer: D

Explanation:

Manufacturing is considered a value-added activity. Value-added activities are those that create value in a product or service from the perspective of the customer. There are certain processes that are necessary but that do not add value for the customer. These are known as business-value-added activities. Design, delivery, and marketing are classic examples of business-value-added activities, because they do not directly add value for the customer, but they are a necessary part of the production process.

Question: 3

Which type of human error is typically limited to a particular task?

- A. Willful
- B. Inadvertent
- C. Technique
- D. Selective

Answer: C

Explanation:

Technique error is typically limited to a particular task. Six Sigma experts identify three categories of human error: technique, inadvertent, and willful. Technique errors are the result of a lack of comprehension or poor training. It is more likely that technique errors will occur on difficult tasks. Inadvertent errors are slightly different, because they occur by accident even when an employee is experienced and understands the task. It is impossible to eliminate entirely inadvertent errors so long as there are human operators. A willful error is made intentionally by an employee. The best way to reduce willful errors is to maintain high morale and incentivize high performance.

Question: 4

Which of the following is a disadvantage of using engineering process control devices to prevent deviation?

- A. The devices must be monitored by human operators.
- B. The use of these devices precludes the use of statistical process controls.
- C. These devices require constant maintenance.
- D. These devices cannot handle multiple inputs.

Answer: B

Explanation:

The use of these devices precludes the use of statistical process controls. One disadvantage of using engineering process controls to prevent deviation is that the use of these devices precludes the use of statistical process controls. An engineering process control is a mechanism that automatically adjusts inputs when it detects variations in the process. A thermostat is a basic example of an engineering process control. It is not necessary for these devices to be monitored by human operators, and in most cases engineering process controls do not require constant maintenance. The constant adjustments made by these devices, however, mean that any data related to their activities is not independent, and therefore cannot be analyzed with statistical process control charts. However, the engineering process controls used by heavy industry are capable of handling a number of different inputs and outputs simultaneously.

Question: 5

Which type of chart is appropriate when sample size is variable and each sample may contain more than one instance of the targeted condition?

- A. P chart
- B. Autocorrelation chart
- C. U chart
- D. X-bar chart

Answer: C

Explanation:

A U chart is appropriate when sample size is variable and each sample may contain more than one instance of the targeted condition. These are control charts most appropriate for handling attributes data. A P chart, on the other hand, is better for measuring the percentage of samples with a particular characteristic when sample size is variable and the characteristic will either be present or absent. An autocorrelation chart indicates the relationships between various factors in the process. An X-bar chart, finally, is a control chart for variables data, in which the subgroup averages are assessed to determine the process location variation over time.

Question: 6

From whose perspective is value defined in the lean methodology?

- A. Customer
- B. Chief executive
- C. Entry-level employee
- D. Competitor

Answer: A

Explanation:

In the lean methodology, value is always defined from the perspective of the customer. This was a radical shift in perspective when it was first introduced. Most businesses assessed value from the perspective of executives or in-house experts. In lean methodology, value is defined as the qualities or characteristics for which a customer is willing to compensate the business.

Question: 7

On an X-bar chart, what variable is always represented on the x-axis?

- A. Variations
- B. Errors
- C. Length
- D. Time

Answer: D

Explanation:

On an X-bar chart, time is always represented on the x-axis. X-bar charts are control charts for variables data. The chart should resemble a chronological model of the process: as the bars move away from the y-axis, they represent the advancement of time. In order for an X-bar chart to be possible, any variation must be assigned a time value. Outlying values on the X-bar chart indicate the presence of special-cause variation.