1. Which of the following is NOT a measure of central tendency?
a) Mean
b) Median
c) Mode
d) Range

Answer: d) Range
Explanation: The range is a measure of variability, not central tendency. It represents the difference between the maximum and minimum values in a dataset.

2. Which distribution is commonly used to model continuous data in statistical quality control?
a) Binomial distribution
b) Poisson distribution
c) Normal distribution
d) Exponential distribution

Answer: c) Normal distribution
Explanation: The normal distribution is widely used in statistical quality control to represent continuous data due to its symmetrical bell-shaped curve.

3. What does the Central Limit Theorem state?
a) The mean of a sample approaches the population mean as the sample size increases.
b) The variability of a sample decreases as the sample size increases.
c) The distribution of sample means approximates a normal distribution regardless of the population distribution, given a large sample size.
d) The median of a sample is equal to the population median.

Answer: c) The distribution of sample means approximates a normal distribution regardless of the population distribution, given a large sample size.
Explanation: The Central Limit Theorem states that as the sample size increases, the distribution of sample means will approach a normal distribution, regardless of the population distribution.

4. Which chart is commonly used for monitoring the number of defects per unit in a process?
a) p-chart
b) np-chart
c) c-chart
d) u-chart

Answer: c) c-chart
Explanation: The c-chart, or count chart, is used for monitoring the number of defects per unit in a process. It is appropriate when the number of defects can vary from unit to unit.

5. What does the “P” in the PDSA cycle stand for?
a) Proceed
b) Plan
c) Process
d) Probabilistic

Answer: b) Plan
Explanation: The PDSA cycle stands for Plan, Do, Study, Act. It is a systematic framework for continuous improvement in quality management.

6. Which control chart is used for monitoring the proportion of nonconforming items in a

sample?
a) p-chart
b) np-chart
c) c-chart
d) u-chart

Answer: a) p-chart
Explanation: The p-chart, or proportion chart, is used for monitoring the proportion of nonconforming items in a sample.

7. In statistical quality control, what does “u” stand for in the u-chart?
a) Upper control limit
b) Unit deviation
c) Unit standard deviation
d) Nonconformities per unit

Answer: d) Nonconformities per unit
Explanation: The u-chart is used for monitoring the number of nonconformities per unit in a process.

8. Which type of control chart is suitable for monitoring individual data points over time?
a) p-chart
b) R-chart
c) np-chart
d) c-chart

Answer: b) R-chart

Explanation: The R-chart, or range chart, is used for monitoring the variability of individual data points over time.

9. Which statistical quality control chart is used for monitoring the number of nonconformities in a sample of constant size?
a) p-chart
b) np-chart
c) c-chart
d) u-chart

Answer: b) np-chart
Explanation: The np-chart is used for monitoring the number of nonconformities in a sample of constant size.

10. What is the primary purpose of trial control limits in control charting?
a) To establish the normal variation of a process.
b) To identify points that may indicate a process shift or instability.
c) To set the upper and lower specification limits.
d) To determine the process capability index.

Answer: a) To establish the normal variation of a process.
Explanation: Trial control limits are initially set to help establish the normal variation of a process before stable control limits are determined.

11. Which type of control chart is used when the data can be categorized into discrete categories?
a) R-chart

b) s-chart
c) Attribute control chart
d) Variable control chart

Answer: c) Attribute control chart
Explanation: Attribute control charts are used when data can be categorized into discrete categories, such as pass/fail or conforming/nonconforming.

12. What is the purpose of the “Act” phase in the PDSA cycle?
a) To analyze the results of the study phase.
b) To make necessary changes based on the study phase findings.
c) To implement the planned changes.
d) To document the improvement process.

Answer: b) To make necessary changes based on the study phase findings.
Explanation: The Act phase in the PDSA cycle involves implementing changes based on the findings and results obtained during the study phase.

13. Which chart is used to monitor the variability of individual measurements within a sample?
a) p-chart
b) np-chart
c) R-chart
d) c-chart

Answer: c) R-chart
Explanation: The R-chart, or range chart, is used to monitor the variability of individual

measurements within a sample.

14. Which type of control chart is suitable for monitoring continuous data over time?
a) p-chart
b) c-chart
c) Variable control chart
d) Attribute control chart

Answer: c) Variable control chart
Explanation: Variable control charts are suitable for monitoring continuous data over time, such as measurements of length, weight, or time.

15. In statistical quality control, what does the “R” stand for in the R-chart?
a) Range
b) Rate
c) Run
d) Resistance

Answer: a) Range
Explanation: The R-chart is used to monitor the range, which represents the variability of individual measurements within a sample.

16. Which control chart is used for monitoring the number of nonconformities per unit in a process that can produce varying numbers of units?
a) p-chart
b) np-chart
c) c-chart

d) u-chart

Answer: d) u-chart
Explanation: The u-chart is used for monitoring the number of nonconformities per unit in a process that can produce varying numbers of units.

17. What does the “Study” phase in the PDSA cycle involve?
a) Implementing planned changes
b) Analyzing the results of the study
c) Documenting the improvement process
d) Testing and observing the effects of planned changes

Answer: d) Testing and observing the effects of planned changes
Explanation: The Study phase in the PDSA cycle involves testing and observing the effects of planned changes to assess their effectiveness.

18. Which control chart is used for monitoring the number of nonconformities in a sample of constant size?
a) p-chart
b) np-chart
c) c-chart
d) u-chart

Answer: b) np-chart
Explanation: The np-chart is used for monitoring the number of nonconformities in a sample of constant size.

19. What does the “Do” phase in the PDSA cycle involve?

a) Analyzing the results of the study phase

b) Documenting the improvement process

c) Implementing planned changes

d) Testing and observing the effects of planned changes

Answer: c) Implementing planned changes
Explanation: The Do phase in the PDSA cycle involves implementing planned changes in the process or system.

20. Which control chart is used for monitoring the proportion of nonconforming items in a sample?
a) p-chart
b) np-chart
c) c-chart
d) u-chart

Answer: a) p-chart
Explanation: The p-chart is used for monitoring the proportion of nonconforming items in a sample.

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