1. What type of studies assess the ability of a process to consistently meet performance and technical specifications?
a) Attribute-process capability studies
b) Variable-process capability studies
c) Improvement studies
d) Inspection studies

Answer: b) Variable-process capability studies
Explanation: Variable-process capability studies evaluate the capability of a process to meet specifications using continuous data, such as measurements or dimensions.

2. In unstable and stable process capability studies, stability refers to:
a) The consistency of process output over time
b) The ability of the process to meet specifications
c) The presence of fluctuations in process output
d) The capacity of the process to improve over time

Answer: a) The consistency of process output over time
Explanation: Stability in process capability studies refers to the consistency of process output over time. An unstable process exhibits fluctuations or variations that can impact its capability to meet specifications consistently.

3. Which type of improvement study focuses on discrete characteristics of a product or process?
a) Attribute improvement study
b) Variable improvement study
c) Inspection improvement study

d) Capability improvement study

Answer: a) Attribute improvement study
Explanation: Attribute improvement studies focus on improving discrete characteristics or attributes of a product or process, such as pass/fail outcomes or categorical data.

4. Acceptance sampling plans are primarily used for:
a) Process improvement
b) Quality control
c) Cost reduction
d) Production scheduling

Answer: b) Quality control
Explanation: Acceptance sampling plans are used in quality control to determine whether a batch or lot of products meets specified quality criteria based on a sample inspection.

5. What does the operating characteristic (OC) curve depict in acceptance sampling?
a) The relationship between producer and consumer risk
b) The distribution of sample means
c) The probability of accepting a lot for various levels of quality
d) The impact of process improvements on product quality

Answer: c) The probability of accepting a lot for various levels of quality
Explanation: The operating characteristic (OC) curve shows the probability of accepting a lot for different levels of quality, based on the sampling plan’s parameters.

6. In acceptance sampling, producer risk refers to the risk of:
a) Rejecting a good lot

b) Accepting a good lot
c) Rejecting a defective lot
d) Accepting a defective lot

Answer: c) Rejecting a defective lot
Explanation: Producer risk in acceptance sampling refers to the risk of incorrectly rejecting a lot that meets quality standards (i.e., a good lot).

7. Theoretical invalidation of acceptance sampling plans occurs when:
a) The process capability exceeds specifications
b) The sampling plan's parameters are not met
c) The lot size is too small for sampling
d) The process stability is uncertain

Answer: b) The sampling plan's parameters are not met
Explanation: Theoretical invalidation of acceptance sampling plans occurs when the parameters defined by the plan, such as sample size or acceptance criteria, are not appropriate for the situation, leading to unreliable quality assessments.

8. The kp rule is applied in acceptance sampling for:
a) Stable processes
b) Chaotic processes
c) Unstable processes
d) All of the above

Answer: d) All of the above
Explanation: The kp rule can be applied in acceptance sampling for stable, unstable, or

chaotic processes to determine sample sizes and acceptance criteria based on the process's characteristics.

9. Single sampling plans are most suitable for:
a) Large lot sizes
b) Small lot sizes
c) Homogeneous lots
d) Heterogeneous lots

Answer: b) Small lot sizes
Explanation: Single sampling plans are typically used for smaller lot sizes where inspecting the entire lot may be impractical or costly.

10. Which sampling plan involves inspecting additional samples if the initial sample fails to provide a conclusive decision?
a) Single sampling plan
b) Double sampling plan
c) Multiple/Sequential sampling plan
d) Continuous sampling plan

Answer: c) Multiple/Sequential sampling plan
Explanation: Multiple/Sequential sampling plans involve inspecting additional samples if the initial sample does not provide a clear decision regarding the acceptance or rejection of the lot.

11. Which risk is associated with accepting a lot that does not meet quality standards?
a) Producer risk

b) Consumer risk
c) Sampling risk
d) Inspection risk

Answer: b) Consumer risk
Explanation: Consumer risk is the risk associated with accepting a lot that does not meet quality standards, leading to potential quality issues for the end-user or consumer.

12. In attribute-process capability studies, attributes refer to:
a) Continuous variables
b) Discrete characteristics
c) Process stability indicators
d) Sampling parameters

Answer: b) Discrete characteristics
Explanation: Attributes in attribute-process capability studies refer to discrete characteristics or qualities of a product or process, such as pass/fail outcomes or categorical data.

13. Which type of inspection plan involves inspecting a fixed number of units from a lot?
a) Single sampling plan
b) Double sampling plan
c) Multiple/Sequential sampling plan
d) Continuous sampling plan

Answer: a) Single sampling plan
Explanation: Single sampling plans involve inspecting a fixed number of units from a lot to make a decision about its acceptance or rejection.

14. What does the kp rule determine in acceptance sampling for variable data?
a) Sample size
b) Acceptance criteria
c) Inspection frequency
d) Lot formation

Answer: a) Sample size
Explanation: The kp rule determines the appropriate sample size for acceptance sampling based on the variability of the data and the desired level of confidence.

15. Which type of process capability study assesses the ability of a process to produce outputs within specified limits?
a) Attribute-process capability study
b) Variable-process capability study
c) Improvement study
d) Inspection study

Answer: b) Variable-process capability study
Explanation: Variable-process capability studies assess the ability of a process to produce outputs within specified limits using continuous data, such as measurements or dimensions.

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