

317- Six Sigma for Operations

1. Who among the following quality gurus is associated with the concept of Total Quality Management (TQM)?

- a) Henry Ford
- b) W. Edwards Deming
- c) Frederick Winslow Taylor
- d) Adam Smith

Answer: b) W. Edwards Deming

2. What is the primary objective of Six Sigma philosophy?

- a) Maximizing defects
- b) Minimizing customer satisfaction
- c) Reducing variation and improving process quality
- d) Ignoring process improvement

Answer: c) Reducing variation and improving process quality

3. Which phase of the DMAIC process focuses on identifying and defining the problem to be addressed?

- a) Define
- b) Measure
- c) Analyze
- d) Improve

Answer: a) Define

4. What does SIPOC stand for in process mapping?

- a) Specific Inputs Process Outputs Customers
- b) Suppliers Inputs Process Outputs Customers
- c) Suppliers Inputs Production Outputs Consumers
- d) Standard Inputs Process Outputs Customers

Answer: b) Suppliers Inputs Process Outputs Customers

5. What is the primary purpose of conducting a Measurement System Analysis (MSA) in Six Sigma?

- a) To increase process variability
- b) To decrease process capability
- c) To assess the accuracy and precision of measurement systems
- d) To ignore data collection

Answer: c) To assess the accuracy and precision of measurement systems

6. What is the main objective of the Define phase in Six Sigma projects?

- a) To complicate project identification
- b) To define project goals and scope
- c) To avoid project charter creation
- d) To increase process variability

Answer: b) To define project goals and scope

7. Which tool is commonly used to map out the sequence of steps in a process and identify potential areas for improvement?

- a) Histogram
- b) Scatter plot
- c) Process Flowchart
- d) Pareto Chart

Answer: c) Process Flowchart

8. What is the primary purpose of a Measurement Systems Analysis (MSA) study?

- a) To assess process capability
- b) To measure the accuracy and precision of measurement systems
- c) To ignore process characteristics
- d) To maximize process variability

Answer: b) To measure the accuracy and precision of measurement systems

9. Which statistical concept measures the ability of a process to produce output within specification limits?

- a) Process capability analysis
- b) Process stability analysis
- c) Histogram
- d) Scatter plot

Answer: a) Process capability analysis

10. What is the significance of the DMAIC methodology in Six Sigma?

- a) It focuses on increasing process variability
- b) It provides a structured approach for process improvement
- c) It aims to maximize defects
- d) It ignores process mapping

Answer: b) It provides a structured approach for process improvement

11. What is the purpose of hypothesis testing in the Analyze phase of Six Sigma?

- a) To increase process variability
- b) To confirm assumptions about the process
- c) To minimize process capability
- d) To ignore correlation and regression analysis

Answer: b) To confirm assumptions about the process

12. Which statistical technique is used to determine the relationship between two variables?

- a) Histogram
- b) Scatter plot
- c) Process flowchart
- d) Failure Mode and Effects Analysis (FMEA)

Answer: b) Scatter plot

13. What does ANOVA stand for in Six Sigma?

- a) Analysis of Very Accurate Data
- b) Analysis of Variance
- c) Analysis of Non-Normal Data
- d) Analysis of Nominal Variables

Answer: b) Analysis of Variance

14. What is the primary objective of the Improve phase in Six Sigma projects?

- a) To maximize defects
- b) To minimize process variability
- c) To implement and test solutions
- d) To ignore process improvement

Answer: c) To implement and test solutions

15. What is the purpose of Design of Experiments (DOE) in Six Sigma?

- a) To complicate the improvement process
- b) To minimize process capability
- c) To systematically test multiple factors and their interactions
- d) To ignore the impact of process changes

Answer: c) To systematically test multiple factors and their interactions

16. What are the Seven Quality Control Tools commonly used in Six Sigma projects?

- a) Scatter plot, Histogram, Pareto Chart, Flowchart, Check Sheet, Cause and Effect Diagram, Control Chart
- b) Pie chart, Bar chart, Line graph, Radar chart, Box plot, Radar chart, Control chart
- c) Control chart, Scatter plot, Check Sheet, Radar chart, Histogram, Flowchart, Box plot
- d) Pareto Chart, Bar chart, Radar chart, Line graph, Check Sheet, Cause and Effect Diagram, Flowchart

Answer: a) Scatter plot, Histogram, Pareto Chart, Flowchart, Check Sheet, Cause and Effect Diagram, Control Chart

17. What is the primary purpose of Statistical Process Control (SPC) in Six Sigma?

- a) To increase process variability
- b) To monitor and control process performance
- c) To minimize customer satisfaction
- d) To ignore control chart usage

Answer: b) To monitor and control process performance

18. What is the purpose of Control Charts in SPC?

- a) To maximize defects
- b) To ignore process variation
- c) To monitor process performance over time

d) To minimize customer satisfaction

Answer: c) To monitor process performance over time

19. What is the significance of Operating Characteristic (OC) Curve in Statistical Process Control?

a) It measures process capability

b) It evaluates the accuracy of measurements

c) It monitors the performance of control charts

d) It determines the probability of accepting or rejecting a lot

Answer: d) It determines the probability of accepting or rejecting a lot

20. What is the primary focus of Acceptance Sampling in Six Sigma?

a) To maximize defects

b) To minimize process variability

c) To assess the quality of incoming or outgoing lots

d) To ignore process improvement

Answer: c) To assess the quality of incoming or outgoing lots

21. What is the main objective of Design for Six Sigma (DFSS)?

a) To increase process variability

b) To minimize customer satisfaction

c) To design new processes and products with a focus on quality and efficiency

d) To ignore process improvement

Answer: c) To design new processes and products with a focus on quality and efficiency

22. What are the primary layers of Six Sigma teams in organizations?

a) Yellow Belt, Green Belt, Black Belt, Master Black Belt

b) White Belt, Yellow Belt, Green Belt, Black Belt

c) Black Belt, Master Black Belt, Green Belt, Yellow Belt

d) Master Black Belt, White Belt, Yellow Belt, Green Belt

Answer: c) Black Belt, Master Black Belt, Green Belt, Yellow Belt

23. What is a critical success factor in the implementation of Six Sigma?

a) Maximizing defects

b) Minimizing customer satisfaction

c) Strong leadership support and commitment

d) Ignoring employee engagement

Answer: c) Strong leadership support and commitment

24. What is a key aspect of Lean Six Sigma methodology?

a) Focusing solely on process improvement

b) Maximizing defects

c) Integrating Lean principles with Six Sigma tools and techniques

d) Ignoring customer feedback

Answer: c) Integrating Lean principles with Six Sigma tools and techniques

25. How can organizations benefit from Lean Six Sigma implementation?

- a) By increasing defects
- b) By minimizing customer satisfaction
- c) By improving process efficiency and reducing waste
- d) By ignoring process improvement

Answer: c) By improving process efficiency and reducing waste