

Self-Assessment Questions for Module 08 Project Quality Management

Question 1: Linda is managing a project that involves constructing a website and providing technical support to the customer for three months after the deployment of the system. The system has been deployed and is currently in the support phase. A strange problem has occurred that slows down the system for unknown reasons. Linda wants to investigate this issue before taking any corrective action. Which of the following tools and techniques can help Linda identify the root cause of the system slowdown?

- A.) Ishikawa Diagram
- B.) Control Chart
- C.) Flowchart
- D.) Run Chart

Question 2: Susan has just finished plotting a Scatter Diagram illustrating the relationship between project costs and time. The dots on the chart are randomly distributed. What does this mean?

- A.) There is a “causation” relationship between time and costs. Project costs are directly dependent on time.
- B.) There is a “causation” relationship between time and costs. Project time is directly dependent on project costs.
- C.) There is a “correlation” between project time and costs. Increase in project time tends to increase project costs.
- D.) There is no relationship between project time and costs.

Question 3: Jane is using a spreadsheet software application to chart the results of a process analysis she has recently performed. She wants to create a Pareto Chart to document her findings but unfortunately the software application doesn't support creating Pareto Charts. Which of the following charts should Jane use in place of the Pareto Chart?

- A.) Flowchart
- B.) Run Chart
- C.) Scatter Chart
- D.) Histogram

Question 4: Which of the following processes supports and implements continuous process improvement on a project?

- A.) Plan Quality Management
- B.) Validate Scope
- C.) Perform Quality Assurance
- D.) Control Quality

Question 5: A project is required to produce 10,000 concrete blocks daily for 120 days. According to the approved specifications, each block should weigh between 2.75 to 3.25 Kg. Every day measurements are performed where a random sample of 500 blocks is weighed, and an average weight is calculate for this sample. The first week's results are (in Kg): 3.21, 3.17, 3.25, 3.23, 3.25, 3.12, and 3.17. Which of the following statements is correct regarding the manufacturing process?

- A.) The measurements are not precise.
- B.) The measurements are not accurate.
- C.) The process in not under control.
- D.) The blocks are not acceptable.

Question 6: Which of the following is an example of the Cost of Nonconformance?

- A.) Training Costs
- B.) Rework Costs
- C.) Documentation Costs
- D.) Inspection Costs

Question 7: Which of the following tools and techniques of the Perform Quality Assurance process may help in reviewing a project's policies, processes and procedures?

- A.) Quality Management Plan
- B.) Design of Experiments
- C.) Quality Audits
- D.) Process Analysis

Question 8: The upper and lower control limits of a control chart are usually $\pm 3\sigma$. What is σ ?

- A.) Mean
- B.) Range
- C.) Standard Deviation
- D.) Variation

Question 9: Which of the following entities would not be involved in the Perform Quality Assurance process?

- A.) The Quality Assurance Department of the performing organization
- B.) The Process Improvement Team of the performing organization
- C.) The Project Team
- D.) The Project Customer

Question 10: Robert is managing an Enterprise Resource Planning (ERP) software development project. The project is in its execution phase and the customer has just requested removing some of the features from the first version of the software. This was requested to expedite the delivery of the first version. This action shouldn't affect which of the following?

- A.) The schedule of the version.
- B.) The costs of the version.
- C.) The grade of the version.
- D.) The quality of the version.

Question 11: A construction company that is very experienced in the construction of residential complexes is building a hospital for the first time. Since the organization has never built a hospital before, the project manager wants to follow very strict quality assurance procedures on the project to ensure compliance to the quality requirements. The margin of error is minimal and the deadlines are very rigid. Which of the following is the best tool and technique for determining the quality assurance activities in this scenario?

- A.) Design of Experiments
- B.) Benchmarking
- C.) Statistical Sampling
- D.) Quality Audits

Question 12: John is managing an industrial design project. He has managed many projects in the past of similar scope and size. John believes that since the project's requirements are very specific and clear, he doesn't have to implement quality assurance procedures on the project. However, John does implement strong quality control procedures on the project. Is John doing the right thing?

- A.) Yes, John has the authority to select which PMBOK Guide processes to follow.
- B.) Yes, quality assurance is not required since quality control has been implemented.
- C.) No, this opposes PMBOK Guide best practices.
- D.) No, this is not effective project management.

Question 13: Which of the following techniques emphasizes developing various prototypes, models or process combinations in order to select the ideal prototype, model or a process combination?

- A.) Design of Experiments
- B.) Statistical Sampling
- C.) Benchmarking
- D.) Control Charts

Question 14: Which of the following tools and techniques can be used to identify bottlenecks in any process?

- A.) Flowchart
- B.) Control Chart
- C.) Run Chart
- D.) Histogram

Question 15: Which of the following is not a process improvement methodology?

- A.) Lean
- B.) Deming
- C.) Six Sigma
- D.) Total Quality Management

Answer Sheet for Self-Assessment 08

| Question Number | My Answer | Correct | Incorrect |
|-----------------|-----------|--------------------------|--------------------------|
| Question 01 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 02 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 03 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 04 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 05 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 06 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 07 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 08 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 09 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 10 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 11 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 12 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 13 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 14 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Question 15 | | <input type="checkbox"/> | <input type="checkbox"/> |
| Total Number | | | |
| % Correct | | _____ % | |

To calculate the % correct, divide the "total correct" by 0.15. Example: If you have 13 correct then calculate $13 / 0.15 = 86.6\%$

Answers for Self-Assessment 08

| Question Number | Correct Answer |
|-----------------|----------------|
| Question 01 | A |
| Question 02 | D |
| Question 03 | D |
| Question 04 | C |
| Question 05 | C |
| Question 06 | B |
| Question 07 | C |
| Question 08 | C |
| Question 09 | D |
| Question 10 | D |
| Question 11 | B |
| Question 12 | A |
| Question 13 | A |
| Question 14 | A |
| Question 15 | B |

Answers & Explanations for Self-Assessment 08

Question 1: Linda is managing a project that involves constructing a website and providing technical support to the customer for three months after the deployment of the system. The system has been deployed and is currently in the support phase. A strange problem has occurred that slows down the system for unknown reasons. Linda wants to investigate this issue before taking any corrective action. Which of the following tools and techniques can help Linda identify the root cause of the system slowdown?

- A.) Ishikawa Diagram
- B.) Control Chart
- C.) Flowchart
- D.) Run Chart

Correct answer is **A**

Explanation: A Cause and Effect diagram is used to identify root causes. These diagrams are also called Fishbone Diagrams or Ishikawa Diagrams.

Reference: PMBOK Guide 5th Edition, page 236

Question 2: Susan has just finished plotting a Scatter Diagram illustrating the relationship between project costs and time. The dots on the chart are randomly distributed. What does this mean?

- A.) There is a “causation” relationship between time and costs. Project costs are directly dependent on time.
- B.) There is a “causation” relationship between time and costs. Project time is directly dependent on project costs.
- C.) There is a “correlation” between project time and costs. Increase in project time tends to increase project costs.
- D.) There is no relationship between project time and costs.

Correct answer is **D**

Explanation: Scatter diagrams cannot detect "causation" between two variables. Causation can only be determined by scientific evidence. Therefore, the first two choices cannot be true. However, Scatter Diagrams do help in detecting "correlation" between the variables. If the Scatter Diagram displays a random pattern between the plotted dots, this means that the variables are not related to each other.

Reference: PMBOK Guide 5th Edition, page 238

Question 3: Jane is using a spreadsheet software application to chart the results of a process analysis she has recently performed. She wants to

create a Pareto Chart to document her findings but unfortunately the software application doesn't support creating Pareto Charts. Which of the following charts should Jane use in place of the Pareto Chart?

- A.) Flowchart
- B.) Run Chart
- C.) Scatter Chart
- D.) Histogram

Correct answer is **D**

Explanation: A Pareto Chart is an enhanced version of a Histogram. If the spreadsheet software doesn't support creating Pareto Charts, using a Histogram is the next best choice.

Reference: PMBOK Guide 5th Edition, pages 237, 238

Question 4: Which of the following processes supports and implements continuous process improvement on a project?

- A.) Plan Quality Management
- B.) Validate Scope
- C.) Perform Quality Assurance
- D.) Control Quality

Correct answer is **C**

Explanation: A process that implements anything should be a process from the Executing process group. The Plan Quality Management process plans continuous process improvement in a project, but the Perform Quality Assurance process actually implements this plan.

Reference: PMBOK Guide 5th Edition, page 242

Question 5: A project is required to produce 10,000 concrete blocks daily for 120 days. According to the approved specifications, each block should weigh between 2.75 to 3.25 Kg. Every day measurements are performed where a random sample of 500 blocks is weighed, and an average weight is calculate for this sample. The first week's results are (in Kg): 3.21, 3.17, 3.25, 3.23, 3.25, 3.12, and 3.17. Which of the following statements is correct regarding the manufacturing process?

- A.) The measurements are not precise.
- B.) The measurements are not accurate.
- C.) The process is not under control.
- D.) The blocks are not acceptable.

Correct answer is **C**

Explanation: Precision and Accuracy are relative terms. This means that given two sets of measurements, one set can be either more precise or

more accurate, or both in comparison to the other. Precision and Accuracy cannot be measured within a single set of measurements, therefore the first two choices cannot be true. Since the average measurements fall within the acceptable tolerance levels as indicated in the approved specifications, the first week's results are acceptable. However, the manufacturing process is not stable since seven consecutive measurements are above the mean.

Reference: PMBOK Guide 5th Edition, page 238

Question 6: Which of the following is an example of the Cost of Nonconformance?

- A.) Training Costs
- B.) Rework Costs
- C.) Documentation Costs
- D.) Inspection Costs

Correct answer is **B**

Explanation: Cost of Nonconformance is the money spent during and after the project as a result of product failures. The cost involved in the rework performed on products due to non-compliance of requirements is an example of the Cost of Nonconformance.

Reference: PMBOK Guide 5th Edition, page 235

Question 7: Which of the following tools and techniques of the Perform Quality Assurance process may help in reviewing a project's policies, processes and procedures?

- A.) Quality Management Plan
- B.) Design of Experiments
- C.) Quality Audits
- D.) Process Analysis

Correct answer is **C**

Explanation: The first two answer choices are incorrect because they are not tools and techniques of the Perform Quality Assurance process. There is a slight overlap between the scope of a Quality Audit and Process Analysis. The Process Analysis technique is specific to analyzing a project's actual execution processes in order to optimize and improve them. A Quality Audit has a wider scope because it involves determining whether project activities comply with organizational and project policies, processes and procedures.

Reference: PMBOK Guide 5th Edition, page 247

Question 8: The upper and lower control limits of a control chart are usually $\pm 3\sigma$. What is σ ?

- A.) Mean
- B.) Range
- C.) Standard Deviation
- D.) Variation

Correct answer is **C**

Explanation: The control limits of a control chart are based on an empirical rule stating that normally 99.73% of the values lie within three standard deviations of the mean. If any point falls outside of this limit, it indicates that something unusual has happened and not because of the natural process variation. σ is the symbol for standard deviation.

Reference: PMBOK Guide 5th Edition, page 238

Question 9: Which of the following entities would not be involved in the Perform Quality Assurance process?

- A.) The Quality Assurance Department of the performing organization
- B.) The Process Improvement Team of the performing organization
- C.) The Project Team
- D.) The Project Customer

Correct answer is **D**

Explanation: The Project Team, Quality Assurance Department or similar department often oversees Quality Assurance activities. Perform Quality Assurance is an internal process performed by the organization. It is usually executed earlier in the project than performing the Validate Scope process, where the customer is invited to inspect the produced deliverables.

Reference: PMBOK Guide 5th Edition, page 242

Question 10: Robert is managing an Enterprise Resource Planning (ERP) software development project. The project is in its execution phase and the customer has just requested removing some of the features from the first version of the software. This was requested to expedite the delivery of the first version. This action shouldn't affect which of the following?

- A.) The schedule of the version.
- B.) The costs of the version.
- C.) The grade of the version.
- D.) The quality of the version.

Correct answer is **D**

Explanation: Quality means conformance to the customer requirements. Since the customer has requested that some of the features be removed to

expedite the delivery of the version, this shouldn't affect the quality of the version being developed.

Reference: PMBOK Guide 5th Edition, page 228

Question 11: A construction company that is very experienced in the construction of residential complexes is building a hospital for the first time. Since the organization has never built a hospital before, the project manager wants to follow very strict quality assurance procedures on the project to ensure compliance to the quality requirements. The margin of error is minimal and the deadlines are very rigid. Which of the following is the best tool and technique for determining the quality assurance activities in this scenario?

- A.) Design of Experiments
- B.) Benchmarking
- C.) Statistical Sampling
- D.) Quality Audits

Correct answer is **B**

Explanation: Benchmarking involves following best practices as a basis for measuring performance. When an organization has no previous experience and knowledge of the requirements, Benchmarking is the best technique to use to measure performance.

Reference: PMBOK Guide 5th Edition, page 239

Question 12: John is managing an industrial design project. He has managed many projects in the past of similar scope and size. John believes that since the project's requirements are very specific and clear, he doesn't have to implement quality assurance procedures on the project. However, John does implement strong quality control procedures on the project. Is John doing the right thing?

- A.) Yes, John has the authority to select which PMBOK Guide processes to follow.
- B.) Yes, quality assurance is not required since quality control has been implemented.
- C.) No, this opposes PMBOK Guide best practices.
- D.) No, this is not effective project management.

Correct answer is **A**

Explanation: The PMBOK Guide processes do not need to be uniformly applied to every project. The project management team tailors the PMBOK Guide framework to the specific project and the Project Management Plan documents the processes selected by the project team.

Reference: PMBOK Guide 5th Edition, page 2

Question 13: Which of the following techniques emphasizes developing various prototypes, models or process combinations in order to select the ideal prototype, model or a process combination?

- A.) Design of Experiments
- B.) Statistical Sampling
- C.) Benchmarking
- D.) Control Charts

Correct answer is **A**

Explanation: Design of Experiments is a statistical technique that emphasizes developing different combinations by changing different factors in order to identify the most optimal combination of these factors.

Reference: PMBOK Guide 5th Edition, pages 239, 240

Question 14: Which of the following tools and techniques can be used to identify bottlenecks in any process?

- A.) Flowchart
- B.) Control Chart
- C.) Run Chart
- D.) Histogram

Correct answer is **A**

Explanation: A Flowchart is a diagram that graphically maps a process. This helps to identify bottlenecks and failing steps in a process.

Reference: PMBOK Guide 5th Edition, page 236

Question 15: Which of the following is not a process improvement methodology?

- A.) Lean
- B.) Deming
- C.) Six Sigma
- D.) Total Quality Management

Correct answer is **B**

Explanation: W. Edwards Deming was an American statistician and quality management professional. He was responsible for many important contributions to Total Quality Management and process improvement. However, "Deming" itself is not a process improvement methodology.

Reference: PMBOK Guide 5th Edition, page 229

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