**TUTORIAL 10**

* **Multiple Choice:**

1. \_\_\_\_\_\_\_\_\_ is the degree to which a set of inherent characteristics fulfills requirements.

1. Quality
2. Conformance to requirements
3. Fitness for use
4. Reliability

2. What is the purpose of project quality management?

1. to produce the highest-quality products and services possible
2. to ensure that appropriate quality standards are met
3. to ensure that the project will satisfy the needs for which it was undertaken
4. all of the above

3. \_\_\_\_\_\_\_\_\_\_ generates ideas for quality improvements by comparing specific project practices or product characteristics to those of other projects or products within or outside the performing organization.

1. Quality audits
2. Design of experiments
3. Six Sigma
4. Benchmarking

4. What does the term *kaizen* mean?

1. minimize waste
2. maximize value
3. do it right the first time
4. improvement

5. What tool can you use to determine whether a process is in control or out of control?

1. a cause-and-effect diagram
2. a control chart
3. a run chart
4. a control panel diagram

6. Six Sigma’s target for perfection is the achievement of no more than defects, errors, or mistakes per million opportunities.

1. 6
2. 9
3. 3.4
4. 1

7. The seven run rule states that if seven data points in a row on a control chart are all below the mean, above the mean, or all increasing or decreasing, then the process needs to be examined for problems.

1. random
2. nonrandom
3. Six Sigma
4. Quality

8. What is the preferred order for performing testing on IT projects?

1. unit testing, integration testing, system testing, user acceptance testing
2. unit testing, system testing, integration testing, user acceptance testing
3. unit testing, system testing, user acceptance testing, integration testing
4. unit testing, integration testing, user acceptance testing, system testing

9. \_\_\_\_\_\_\_\_ is known for his work on quality control in Japan, and he developed the 14 Points for Management in his text Out of the Crisis.

1. Juran
2. Deming
3. Crosby
4. Ishikawa

10. PMI’s OPM3 is an example of a model or framework for helping organizations improve their processes and systems.

1. benchmarking
2. Six Sigma
3. maturity
4. quality

* **Short Answer:**

1. What are the main processes included in project quality management?

Project Quality Management involves three main processes:

* **Quality Planning**: Identifying quality standards relevant to the project and determining how to meet them. This involves defining the quality objectives, identifying quality standards, and developing a plan to ensure these standards are met.
* **Quality Assurance**: This is the process of auditing and ensuring the quality standards and operational definitions defined in quality planning are followed. Quality assurance activities focus on improving processes to prevent defects in the deliverables.
* **Quality Control**: Monitoring and recording results to assess performance and recommend changes. This involves measuring specific project results to see if they meet relevant quality standards and identifying ways to eliminate causes of unsatisfactory performance.

2. How do functionality, system outputs, performance, reliability, and maintainability requirements affect quality planning?

* **Functionality**: Determines how well the project delivers expected features. Quality planning must ensure the product meets user needs for functionality, requiring a thorough understanding of user expectations.
* **System Outputs**: The quality of outputs, such as reports, user interfaces, and response times, influences customer satisfaction. Planning must ensure these outputs meet expectations, specifying quality metrics for each type of output.
* **Performance**: Defines how well a system performs under certain conditions. Performance requirements directly influence quality planning as they specify the conditions under which the system must perform, affecting resource allocation and testing needs.
* **Reliability**: Reliability addresses the likelihood of the system functioning without failure over a certain period. It affects quality planning by setting standards for testing and validation procedures to ensure consistent system performance.
* **Maintainability**: Maintainability refers to the ease with which a product can be modified or repaired. Quality planning must address maintainability by incorporating designs and procedures that facilitate ongoing support and updates.

3. What are the three main outputs of quality control?

* **Quality Control Measurements**: Data and metrics from quality control activities that track how well deliverables meet quality standards. These are used to analyze trends and determine process improvements.
* **Validated Changes**: Changes verified as correct and effective to ensure they meet quality requirements. This ensures that approved project modifications are correctly implemented and meet quality criteria.
* **Verified Deliverables**: Deliverables inspected and approved to meet project specifications. Verification ensures that completed deliverables conform to the standards and requirements.

4. Discuss three suggestions for improving IT project quality

* **Implement Continuous Testing and Integration**: Regular testing and integration ensure that errors are detected early and that the code remains stable. Automated testing tools can streamline this process and increase testing coverage.
* **Adopt Agile and Iterative Approaches**: Agile methodologies allow for continuous feedback from users and stakeholders, which helps in identifying and addressing quality issues throughout the project lifecycle, rather than at the end.
* **Focus on Clear Documentation and Communication**: Detailed and updated documentation helps team members understand requirements and project status, reducing misinterpretations that can lead to quality issues. Regular communication ensures alignment on quality expectations and project progress.

5. Describe three different types of software that can assist in project quality management.

* **Project Management Software (e.g., Microsoft Project, Asana)**: These tools help plan, track, and manage project tasks and timelines, allowing managers to identify potential issues that may affect quality early in the project lifecycle.
* **Quality Management Software (e.g., Qualio, Greenlight Guru)**: These platforms offer tools for managing compliance, quality documentation, audits, and risk management, helping teams adhere to regulatory standards and industry quality practices.
* **Automated Testing Tools (e.g., Selenium, JUnit)**: Automated testing software helps detect defects quickly and ensures that software functions as intended. These tools support both functional and non-functional testing, essential for maintaining high quality in IT projects.

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