



PSG COLLEGE OF TECHNOLOGY, COIMBATORE -4. F 20731

16 Pages

Roll No.	Name of the Student	Signature of the Student	Signature of the Invigilator
20Z309	ATCHAYASRI R	<i>Atchayasri</i>	<i>[Signature]</i>
Branch & Semester	BE - CSE	07	Test No. 03 Date 23/10/24
Course Code	19Z023	Title	Software Testing and Quality Assurance

1. a

- i) D) Project Initiation Note ✓ (v)
- a (240) motivates transparent platform
- ii) A) Design Errors ✗ (iii)
- iv) Black box Testing ✓ (ii)
- v) B) All the tests run ✗ (iii)
- a quong ABB for estabilish
- vi) Platform Independent ✗ (ii)
- vii) c) Defect Detection rate through automated tests. ✓ (ii)
- a quong ABB for estabilish
- viii) (ii)
- a quong ABB for estabilish

2 a

- i) c) To ensure that software meets specified quality standards and requirements.
- ii) b) Testing Practices
- iii) i) Reducing overall cost of software development
- iv) c) Level 3: Defined
- v) Test Maturity Model
- vi) Quality Management system (QMS)
- vii) cost impact of defects.

2 b

- ii) Roles of SQA group in cloud based inventory system.
 - Roles of SQA group are
 - 1) prepare a SQA plan of the project
 - 2) participate in the development of software process description of the project
 - 3) review the software engineering activities to verify the compliance with defined software process
 - 4) Audit designated software work products to verify compliance with those defined as a part of process.

5) Ensuring the deviations of software work and work product are documented and handled according to the documented procedure

6) Record any non-compliance and report to the senior management

i) Prepare a SOA plan of the project.

plan identifies

→ evaluations to be performed

For cloud based inventory system, we can evaluate security testing, scalability assessments and performance testing.

→ Reviews and audits to be performed

→ standards applicable to the cloud based inventory system.

(ISO/IEC 27017 - cloud security ,

ISO/IEC 27018 - cloud data protection)

→ Procedures for error tracking & reporting

→ Documents to be produced by SOA group

→ Amount of feedback provided to the software project team.

(continuous feedback about cloud service provider's Performance will be given)

2) Participate and involve the development of project's software process description for the compliance review for the compliance with organizational policy, internal software standards (e.g: ISO-9001) and other part of project's plan (e.g: External Impair Standards)

3) Reviews software engineering activities to verify compliance with defined software process

SOA group identifies, verifies and tracks deviations from software process and make sure that the corrections have been made.

4) Audits designated work products to verify compliance with those defined as part of software process

SOA group reviews selected software work products, identifies, verifies document and track deviations and make sure corrections are made and periodically report the result to project Manager.

5) Ensuring deviations from work product and software work were documented and handled according to the documented procedure.

Deviations may be encountered in project plan, process description, applicable standards or Technical Work Product.

In cloud based inventory system, deviations like system's violation, unavailability of system, are documented.

6) Record any non-compliance and report to senior management.

Non-compliance are tracked until they are resolved.

In cloud based inventory system, if the system couldn't able to backup the storage, it will be tracked until they are resolved.

Before a storage damage ref. moon

and 210 to defined

2.C

ii) Quality Management System: A systematic approach

Quality Management System (QMS) is a process based approach to maintain quality throughout development cycle.

QMS is the formalized system

that provides process, procedures, responsibility for achieving quality policy and objectives.

QMS helps to coordinate and direct organization's activities to meet the customer regulatory and compliance and provision of products and services in a most cost and resource efficient manner, creating a room for expansion, growth & profit.

Benefits of QMS are

- i) Meeting the customer's requirement's - helps to instill the confidence in the organization in turn leading to sales, profits and customers

ii) Meeting the organization's requirements - ensures meeting compliance and regulatory in assuring provision of products and services, creating room for growth, expansion & profit.

Issues addressed by QMS:

i) Inconsistent software quality:

QMS provides the standardized process for all projects so that the development team follow same quality practices and adhere to "predefined standards".

Regular audits and quality control procedure should be done to ensure that every release meet the quality benchmarks with more of consistent quality.

ii) Lack of defined Process:

Lack of defined process leads to confusion, delays and inefficiencies.

so, QMS defines clear procedures for all phases of software development.

- Standardizes quality processes and ensures that it is predictable by the organization's software development process and to know everyone in the organization follows a consistent approach in turn reducing the inefficiencies.

iii) Frequent bugs and defects:

Frequent bugs and defects leads to high maintenance cost & customer dissatisfaction.

"Root cause analysis" is incorporated into QMS to identify how the defect occurs, how to eliminate it, how to avoid the error to reoccur. QMS introduce preventive measures such as automated testing, code reviews and so on.

i)

Test Maturity Model:

- Has 5 steps
- Initialization
- Definition
- Integration
- Management & Measurement
- Optimisation

Initialisation:

- No testing process in the first level of TM
- Primary purpose is to ensure that software executes successfully and there is no obstruction.

→ Exploratory and AD HOC testing are performed in this level.

Definition:

- Second level in TM is definition where it is all about defining requirements.
- Test cases can create Test plan, Test strategy and Test cases in order to built the

software according to client's requirements.

Integration:

- primary purpose of this level is to make sure that testing integrates with software development and becomes part of it.
- in V-model, both development and testing is there where testing comes after the development phase is completed.
- test objectives is based on risk management as the test is implemented independently.

Measurement & Management:

- purpose of this level is to make sure that testing is a part of all activities in the software development process.
- also to ensure that Test measurement program is written.

Optimisation:

- The last and the fifth step of Test maturity model is optimisation.
- primary purpose of this level is to optimise the test process itself.
- In this Level, Quality control and Bug Inhibition takes place.