A10.2-R4: SOFTWARE TESTING AND QUALITY MANAGEMENT

NOTE:

1. There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.

2. **PART ONE** is to be answered in the **OMR ANSWER SHEET** only, supplied with the question paper, as per the instructions contained therein. **PART ONE** is **NOT** to be answered in the answer book.

3. Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer book for **PART TWO** will be supplied at the table when the answer sheet for **PART ONE** is returned. However, candidates, who complete **PART ONE** earlier than one hour, can collect the answer book for **PART TWO** immediately after handing over the answer sheet for **PART ONE**.

TOTAL TIME: 3 HOURS **TOTAL MARKS: 100**

(PART ONE – 40; PART TWO – 60)

PART ONE
(Answer all the questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

1.1 The inputs for developing a test plan are taken from
A) Project Plan
B) Business Plan
C) Support Plan
D) None of the above

1.2 Classes, Instances, Methods, Abstraction are part of
A) Object oriented programming
B) Modular programming
C) Structure programming
D) All of the above

1.3 A regression test:
A) Will always be automated
B) Will help ensure unchanged areas of the software have not been affected
C) Will help ensure changed areas of the software have not been affected
D) Can only be run during user acceptance testing

1.4 Which of the following could be a reason for a failure?
1) Testing fault
2) Software fault
3) Design fault
4) Environment Fault
5) Documentation Fault

A) 2 is a valid reason; 1,3,4 & 5 are not
B) 1,2,3,4 are valid reasons; 5 is not
C) 1,2,3 are valid reasons; 4 & 5 are not
D) All of them are valid reasons for failure

1.5 A quality attribute is
A) An aspect of a system that can be measured on a scale
B) An aspect of a system that either exists or doesn't
C) Software that is of very high quality
D) An aspect of the system that cannot be tested

1.6 Which of the following is not a static testing technique?
A) Error guessing
B) Walkthrough
C) Data flow analysis
D) Inspections

1.7 During which test activity could faults be found most cost effectively?
A) Execution
B) Design
C) Planning
D) Check Exit criteria completion

1.8 The purpose of requirement phase is
A) To freeze requirements
B) To understand user needs
C) To define the scope of testing
D) All of the above

1.9 The process starting with the terminal modules is called
A) Top-down integration
B) Bottom-up integration
C) None of the above
D) Module integration

1.10 Which of the following is not a perspective of quality?
A) Transcendent
B) Product-based
C) Translucent
D) User-based

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

2.1 A Top down approach is the piecing together of systems to give rise to grander systems.
2.2 Alpha testing is performed by customers or representatives at an in-house site.
2.3 Component testing does not involve regression testing.
2.4 The inputs for developing a test plan are taken from a Project plan.
2.5 A reliable system will be one that is unlikely to cause a failure.
2.6 Simplicity is not a characteristic for Testability.
2.7 Test managers should not provide information for risk analysis and quality improvement.
2.8 The Ability to sustain processing in the event problems occur is called Continuity of processing.
2.9 Organizational factors can be part of project risk.
2.10 WinRunner software was an automated functional GUI testing tool.

3. Match words and phrases in column X with the closest related meaning/ word(s)/phrase(s) in column Y. Enter your selection in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

X		Y	
3.1	A frame work that is used to structure, plan and control the process of developing an information system is called	**A.**	SPICE
3.2	A software development process combining elements of both design and prototyping-in-stages, in an effort to combine advantages of top-down and bottom-up concepts	**B.**	Quality Metric
3.3	One of the method to minimize loss due to risk is	**C.**	Test oracle
3.4	This is impractical but possible	**D.**	CMM
3.5	Quantitative measure of the degree to which a system, system components or process possesses a given attribute	**E.**	Spiral Model
3.6	One of the Quality Management Model	**F.**	Exhaustive Testing
3.7	A set of technical standards documents for the computer software development process and related business management function	**G.**	Software Development Technique
3.8	A method of debugging in computer programming	**H.**	Dead code
3.9	A part of a program which is executed but whose result is never used in any other computation	**I.**	Tracing
3.10	The mechanism for determining whether a software program or system has passed or failed	**J.**	Identify error prior to loss
		K.	Execution
		L.	Alpha Testing
		M.	Prototyping

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

A.	Before	**B.**	Beta release	**C.**	Quality
D.	Gray Box Testing	**E.**	Guideline	**F.**	Static analysis tool
G.	Data flow analysis	**H.**	A test management tool	**I.**	Code inspections
J.	Standard	**K.**	Driver	**L.**	Equivalence partitioning
M.	Alpha release				

4.1 Alpha testing must be performed _____ Beta testing.

4.2 To test a function, the programmer has to write a _____, which calls the function and passes its test data.

4.3 _____ is a black box testing technique appropriate to all levels of testing.

4.4 Unreachable code would best be found using a _____.

4.5 We can find anomalies such as using a variable before defining it through _____.

4.6 A tool that supports traceability, recording of incidents or scheduling of tests is called _____.

4.7 The measure used to evaluate the correctness of a product is called the product _____.

4.8 The degree to which a system, system component, or process meets customer or user needs, or expectations is called _____.

4.9 _____ includes both Black box and White Box Testing features.

4.10 _____ is a very early build intended for limited distribution to a few key customers and to marketing for demonstration purposes only**.**

PART TWO

(Answer any **FOUR** questions**)**

5.

a) What are the primary objectives of the Software Testing?

b) You are newly appointed as a test lead in an organization which uses manual testing. Your boss wants you to put forth three testing tools and their features to create awareness about the testing tools in the top management. Suggest any three testing tools for your test Environment and why do you suggest them?

(8+7)

6.

a) Describe the differences between:
   i) Smoke & Sanity testing
   ii) Validation & Verification
   iii) Test Effectiveness & Test efficiency

b) What is a test strategy?

(12+3)

7.

a) What's the difference between priority and severity?

b) When to stop testing?

c) Explain the Boundary Value Analysis.

(5+5+5)

8.

a) What is the Software Quality and what are the various attributes for the software Quality?

b) What is DLL stomping? What is the cause of DLL stomping?

(8+7)

9.

a) What is un-reachable code? What are the various causes for this code? Whether these codes are desirable or undesirable explain?

b) Define Test Cases, Test Scripts and Test suites.

(9+6)