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 **TEAR-OFF ANSWER SHEET** only, attached to 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 "tear-off" answer sheet attached to the question paper, following instructions therein. (1x10)

1.1 Which of the following activity is performed first during acceptance testing?
A) Plan how and who will perform each acceptance activity
B) Schedule adequate time to review the software
C) Identify interim and final software products for acceptance
D) Identify software requirements and acceptance criteria

1.2 Designing the test environment set-up and identifying any required infrastructure and tools are a part of which phase
A) Test Implementation and execution
B) Test Analysis and Design
C) Evaluating the Exit Criteria and reporting
D) Test Closure Activities

1.3 What is the purpose of recording defects?
A) To gather statistics on which tester records maximum defects
B) To correct the defect
C) To present viewpoint to the developer
D) To improve the testing process

1.4 Link Testing is also called
A) Component Integration testing
B) Component System Testing
C) Component Sub System Testing
D) Maintenance testing

1.5 The Integrated Development Environment (IDE) consist of
A) Editor
B) Compiler and Debugger
C) GUI builders
D) All of the above

1.6   Which of the following techniques is NOT a White Box technique?
A)   Statement Testing and Coverage
B)   Decision Testing and Coverage
C)   Condition Coverage
D)   Boundary Value Analysis

1.7   Reporting discrepancies as incidents is a part of which phase?
A)   Test Analysis and Design
B)   Test Implementation and execution
C)   Test Closure Activities
D)   Evaluating exit criteria and reporting

1.8   What is critical in Web Testing?
A)   Performance and Functionality
B)   Functionality and Usability
C)   Usability and Performance
D)   None of the above

1.9   Verification is
A)   Checking that we are building the right system
B)   Checking that we are building the system right
C)   Performed by an independent test team
D)   Making sure that it is what the user really wants

1.10   Software testing accounts to what percent of software development costs?
A)   10-20
B)   40-50
C)   70-80
D)   5-10

2. **Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the "tear-off" sheet attached to the question paper, following instructions therein.** **(1x10)**

2.1 Source code may be converted into an executable image by a compiler but executed immediately in case of an interpreter.

2.2 White box testing will discover the Logical error, Design error and syntax error.

2.3 In Black box testing the test engineer must know the internal working of the application.

2.4 Static linking and window file protection is an solution for the conflicting DLL Problems.

2.5 Data Redundancy in database increases the size of the database unnecessarily.

2.6 Test cases and test dataset needs to be documented and commented, it also form part of the released software system.

2.7 If we find a lot of bugs in testing, we should not be very confident about the quality of software.

2.8 Automation testing is the best way to accomplish most of the testing goals with un-skilled staff.

2.9 The do-while statement is similar to the while statement, but does not evaluates its expression at the bottom of the loop.

2.10 All pair-wise combinations of test set created in orthogonal array testing.

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 "tear-off" answer sheet attached to the question paper, following instructions therein.** **(1x10)**

	X		Y
3.1	In Java, Threads are implemented in the form of objects that contain a method called	**A.**	DLL
3.2	An executable program module in Windows that performs one or more functions at runtime	**B.**	run()
3.3	Valuable source of project information during testing if it contains all information	**C.**	Formal Inspection
3.4	Involves iterative development and the construction of prototypes	**D.**	White Box
3.5	Re-testing the unchanged parts of the application	**E.**	Alpha Testing
3.6	Document detailing a systematic approach to testing a system, application or software is	**F.**	incident logging system
3.7	Actual operational testing by potential users/customers	**G.**	Beta Testing
3.8	Program Monitor, Bench Mark, Performance Analysis are the part of	**H.**	Software Metrics
3.9	A structured process of trying to find defects in development documents, programming code, specifications, designs etc. during various phases of the software development program	**I.**	Test Plan
3.10	Measure of some property of a piece of software and its specifications	**J.**	Testing Tool
		K.	Rapid application development
		L.	Structural
		M.	Regression Testing

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 "tear-off" answer sheet attached to the question paper, following instructions therein.** (1x10)

A.	Data Management Software	B.	Module testing	C.	SQL injection
D.	Software Quality Metrics	E.	Test Objective	F.	Unreachable code
G.	walkthrough	H.	All-pairs testing	I.	Interface
J.	Deliverables	K.	Integration testing	L.	Collaborative software
M.	External variables				

4.1   E-mail and Blog is an example of _____.

4.2   _____ provide a dashboard to the management on the overall health of the process, project and product

4.3   During _____, we concentrate on testing algorithms and their data.

4.4   _____ is an important criterion in deciding what testing technique to be used.

4.5   _____ should be tested during the security testing of an application.

4.6   The objective of _____ is to gain feedback about the technical quality or content of the document

4.7   A collection of methods with no implementation is called an _____.

4.8   Category of bugs dependent on interactions between pairs of parameters can be caught with _____.

4.9   Goods or services that will be provided upon the completion of a project is called _____.

4.10   _____ occupies unnecessary memory.

PART TWO
(Answer any **FOUR** Questions)

5.
a) What are the various Software Development Technique? Explain them briefly.
b) Briefly explain the Top down and Bottom up approach.

(10+5)

6.
a) Describe the following text criterion:
   i) Path Coverage/Testing
   ii) Statement Coverage/Testing
   iii) Branch Coverage/Testing
b) What is difference between functional and non-functional testing?

(10+5)

7.
a) What is DLL and what are the various reason for conflicting DLL?
b) Define the integrated development environment (IDE) with example?
c) Define Unreachable Code? What are the various causes for the unreachable code?

(5+5+5)

8.
a) "Software should be checked for correctness not bugs." Comment.
b) Define Software Quality Parameter (SQP)? Name three quality parameters? Explain them in brief.
c) Describe some techniques to find the different types of errors.

(4+6+5)

9.
a) What are test cases? Define a format of a test case.
b) What are the various Test Data Selection Criteria for Testing?
c) What is the purpose of white box testing?

(6+6+3)