B2.52-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 Hiding internal data from the outside world, and accessing it only through publicly exposed methods is known as data

A) Inheritance
B) Encapsulation
C) Polymorphism
D) Interface

1.2 Regression Software Testing

A) Incomplete testing
B) Un-systematic testing
C) Re-testing the unchanged parts of the application
D) No testing required

1.3 Methodologies adopted while performing Maintenance Testing

A) Breadth Test and Depth Test
B) Retesting
C) Confirmation Testing
D) Sanity Testing

1.4 The Phases of formal review process is mentioned below. Arrange them in the correct order.

i) Planning
ii) Review Meeting
iii) Rework
iv) Individual Preparations
v) Kick Off
vi) Follow Up

A) i), ii), iii), iv), v), vi)
B) vi), i), ii), iii), iv), v)
C) i), v), iv), ii), iii), vi)
D) i), ii), iii), v), iv), vi)

1.5 White Box Techniques are also known as
A) Structural Testing
B) Design Based Testing
C) Error Guessing Technique
D) Experience Based Technique

1.6 What is an equivalence partition or equivalence class?
A) A set of test cases for testing classes of objects
B) An input or output range of values such that only one value in the range becomes a test case
C) An input or output range of values such that each value in the range becomes a test case
D) An input or output range of values such that every tenth value in the range becomes a test case.

1.7 Which of the following is the task of a Tester?
i) Interaction with the Test Tool Vendor to identify best ways to leverage test tool on the project.
ii) Prepare and acquire Test Data
iii) Implement Tests on all test levels, execute and log the tests.
iv) Create the Test Specifications
A) i), ii), iii) are true and iv) is false
B) ii), iii), iv) are true and i) is false
C) i) is true and ii), iii), iv) are false
D) iii) and iv) are true and i) and ii) are false

1.8 A type of functional Testing, which investigates the functions relating to detection of threats, such as virus from malicious outsiders.
A) Security Testing
B) Recovery Testing
C) Performance Testing
D) Functionality Testing

1.9 Static analysis is best described as
A) The analysis of batch programs.
B) The reviewing of test plans.
C) The analysis of program code.
D) The use of black box testing.

1.10 A Project risk includes
A) Organizational Factors
B) Poor Software characteristics
C) Delivery of error prone software
D) Software that does not perform its intended functions

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 A collection of methods with no implementation is called an interface.

2.2 Test engineer must know the internal working of the application in "Black Box" testing.

2.3 In test design phase of the Software testing life cycle, test plans and cases which were developed in the analysis phase are not revised and considered.

2.4 Reviews should be performed on specifications, code, and test plans.

2.5 To develop reliable and maintainable applications, you may follow coding standards and best practices.

2.6 Verification is the assessment of an action, decision, plan, or transaction to establish that it is delivering the intended outcome.

2.7 Software testing is one of the phases of the (Software Development Life Cycle) SDLC.

2.8 Cyclomatic complexity directly measures the number of linearly independent paths through a program's source code.

2.9 SPICE Model is generally used to model linear circuits.

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

X		Y	
3.1	A blueprint for a software object is called	**A.**	Branch Coverages
3.2	One of the test case design strategies in black box testing	**B.**	Alpha Testing
3.3	Testing activity which is performed to expose defects in the interfaces and in the interaction between integrated components	**C.**	Exhaustive Testing
3.4	Reviewing the test basis is a part of which phase	**D.**	Software Configuration Management
3.5	This is impractical but possible	**E.**	Integration level testing
3.6	Pre-release testing by end user representatives at developer's site	**F.**	Boundary Value Analysis
3.7	Methodical process of finding and reducing the number of defects	**G.**	Test Case
3.8	The task of tracking and controlling changes in the software	**H.**	Test Analysis and Design
3.9	Set of conditions or variables under which a tester will determine whether an application or software system is working correctly or not	**I.**	Debugging
3.10	It describes the degree to which the source code of a program has been tested	**J.**	Class
		K.	Test case preparation
		L.	Run time error
		M.	MCDC

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.	Verification	**B.**	Error guessing	**C.**	Logical and Design error
D.	Functionality of the system	**E.**	Live data	**F.**	Equivalence Partitioning
G.	Reduce	**H.**	Increase	**I.**	Tracing
J.	Coding Standard	**K.**	Class	**L.**	Graph
M.	Program tree				

4.1 The McCabe's metric is a _____ based metric.

4.2 Method typically used to reduce the total number of test cases to a finite set of testable test case is _____.

4.3 White Box Testing is done to discover _____.

4.4 Black Box Testing is done to discover _____.

4.5 _____ would not come under Configuration Management.

4.6 Supplements formal test design techniques is called _____.

4.7 The major benefit of verification done early in the life cycle is to _____ defect multiplication.

4.8 _____ is a method of debugging in computer programming.

4.9 Group review is one of the type of review recommended in the _____.

4.10 Comparison of two or more items, or the use of supplementary tests, to ensure the accuracy, correctness, or truth of the information is called _____.

PART TWO

(Answer any **FOUR** questions)

5.

a) What is a Package?

b) What is the difference between Structure Programming, Modular Programming and Object Oriented Programming?

(6+9)

6.

a) What is the difference between client-server testing and web based testing and what are the items that we need to test in such applications?

b) Explain Boundary Value Analysis.

(10+5)

7.

a) What are the various Software Quality Parameters? Explain them.

b) Explain briefly the goals of Software Configuration Management (SCM)?

(8+7)

8.

a) What is Integrated Development Environment (IDE)?

b) Explain unreachable code? What are the various factors for its existence?

c) What is the difference between Event logging and Tracing.

(5+5+5)

9.

a) What are the various factors and causes of conflicting DLL's?

b) What is a Test Case? Explain formal and informal test cases.

c) What is code coverage? State various code coverage criteria.

(6+4+5)