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 Which of the following is a functional testing technique?
A) Stress testing
B) Execution testing
C) Recovery testing
D) Regression testing

1.2 Which of the following documents describes the process of running a test?
A) Test log
B) Test procedure specification
C) Test plan
D) Test summary report

1.3 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

1.4 Which of the following activity is not performed when executing the acceptance plan?
A) Identifying the acceptance objectives
B) Identifying the elements of the software that need to be tested
C) Specifying the pass/fail criteria during software acceptance
D) Reviewing the software during final delivery

1.5 Which of the following is the correct sequence of phases in the testing life cycle?

A) Risk analysis, planning, test design, performing tests, defect tracking and management, quantitative measurement, test reporting

B) Planning, risk analysis, test design, performing tests, defect tracking and management, quantitative measurement, test reporting

C) Planning, risk analysis, test design, performing tests, test reporting, defect tracking and management, quantitative measurement

D) Risk analysis, planning, test design, performing tests, quantitative measurement, test reporting, defect tracking and management

1.6 Which of the following statistical tools can be used to represent a large amount of data in simple chart form?

A) Cause and effect diagram

B) Histogram

C) Pareto chart

D) Control chart

1.7 Which activity needs the stakeholder's approval before beginning test effort estimation?

A) Validate estimate parameters

B) Computer size based on complexities

C) Prepare a test plan

D) Develop a test strategy

1.8 Which of the following statistical tools is used to show the relationship between two variables by displaying data points on a two-dimensional graph?

A) Pareto Chart

B) Scatter plot

C) Run chart

D) Histogram

1.9 What is the purpose of recordings 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

1.10 Statement coverage is also known as:

A) Basis path coverage

B) Basis block coverage

C) Branch coverage

D) Predicate coverage

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 regression test will help to ensure that unchanged areas of the software have not been effected.

2.2 Concatenated Loops can be successfully tested using Loop Testing methodology.

2.3 Data flow analysis is not a static testing technique.

2.4 The process starting with the terminal modules is called module integration.

2.5 The Graph Wizard is to guide you through the graph creation process.

2.6 The Document Generator enables to create a hard copy of the data contained in a Quality center project.

2.7 Cause and Effect Diagram is a static tool.

2.8 ISO 9001 and CMM are software product standards.

2.9 The reliability models for hardware are equally applicable for softwares also.

2.10 SQL is a Data Base Package.

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	Objective of Test case design	**A.**	Least efficient for isolation of cause of error
3.2	Quality control Activity	**B.**	Config audits, Formal Tech reviews & simulations
3.3	Data integrity	**C.**	Freeze requirements
3.4	Software Package	**D.**	Software metric
3.5	Set A="ANNA"	**E.**	Robustness
3.6	Brute Force	**F.**	highest likelihood to detect errors
3.7	Testability	**G.**	Pseudo Code
3.8	V & V activities	**H.**	Inspection
3.9	Requirement phase	**I.**	data Security
3.10	Cyclomatic Complexity	**J.**	MS Office
		K.	Dummy Code
		L.	Software
		M.	Test Scripts

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.	Report	**B.**	ISO 9000	**C.**	Multiplicity
D.	Cost Benefit Analysis	**E.**	Module	**F.**	Digit Check
G.	Reliability	**H.**	Size measurements	**I.**	Testing
J.	Structure	**K.**	Complexity Management	**L.**	Leakage error
M.	System Testing	**N.**	Logical error	**O.**	Audit Trail

4.1 Product measurements are collected in a software project to analyze the _____.

4.2 _____ type of test metrics focus on the internal characteristics of the software at the component level.

4.3 _____ describes the elements of quality assurance system.

4.4 According to the V Model, documents created during the analysis phase can be used to define the _____.

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

4.6 Errors that are undetected at a particular stage in the development life cycle and are carried forward to the next state are _____.

4.7 _____ indicates how many objects participate in a relation.

4.8 _____ testing must precede Unit testing and System testing.

4.9 _____ detects transposition errors.

4.10 Economic feasibility is often referred to as _____.

PART TWO

(Answer any **FOUR** questions)

5. Write the short notes on any **three** of the following:

a) Risk Management
b) White Box Testing
c) Debugging Tools
d) Quality Assurance

(3x5)

6.

a) Define test planning process and test approaches.
b) Identify components of test process and testing tools.

(7+8)

7.

a) What are the basic software quality parameter and metrics?
b) Define Verification and Validation with suitable examples.
c) Differentiate between the Alpha and Beta Testing with examples.

(5+5+5)

8. Explain the following:

a) Risk in Software testing
b) W Model
c) UML and Module

(5+5+5)

9.

a) What is the meaning of Case Tools? Define the limitations of Case Tools in software.
b) What are the advantages of Top-down approach when compared to Bottom-up design?

(8+7)