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 The approach/document used to make sure all the requirements are covered when writing test cases
A)   Test matrix
B)   Check list
C)   Test bed
D)   Traceability matrix

1.2 Executing the same test case by giving the number of inputs on same build called as
A)   Regression Testing
B)   Retesting
C)   Ad hoc Testing
D)   Sanity Testing

1.3 To check whether we have developed the product according to the customer requirements are not. It is a Dynamic process
A)   Validation
B)   Verification
C)   Quality Assurance
D)   Quality Control

1.4 It is a set of levels that defines a testing maturity hierarchy
A)   TIM (Testing Improving Model)
B)   TMM (Testing Maturity Model)
C)   TQM (Total Quality Management)
D)   None of the above

1.5 A Non-Functional Software testing done to check if the user interface is easy to use and understand
A)   Usability Testing
B)   Security Testing
C)   Unit testing
D)   Black Box Testing

B2.52-R4   **Page 1 of 5**   **January, 2013**

1.6   Verification is
A)   Process based
B)   Product based
C)   Both **A)** and **B)**
D)   None of the above

1.7   White box testing is not called as _____
A)   Glass box testing
B)   Closed box testing
C)   Open box testing
D)   Clear box testing

1.8   Requirements Specification, Planning, Test case Design, Execution, Bug Reporting & Maintenance This Life Cycle comes Under
A)   SDLC
B)   STLC
C)   SQLC
D)   BLC

1.9   Management and Measurement, It will come under
A)   CMM Level 1
B)   CMM Level 3
C)   CMM Level 4
D)   CMM Level 2

1.10   _____ means under what test environment(Hardware, software set up) the application will run smooth
A)   Checkpoint
B)   Test Bed
C)   Code Walk through
D)   Checklist

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   Splitting project into tasks and estimate time and resources required to complete each task called as Project Scheduling.

2.2   Path Tested **=** Number of Path Tested / Total Number of Paths.

2.3   Project Risk affects The Schedule or Resources.

2.4   Earlier a defect is found the cheaper it is to fix it.

2.5   Graph-based testing methods can only be used for object-oriented systems.

2.6   Boundary value analysis can only be used to do white-box testing.

2.7   Test case design "in the small" for OO software is driven by the algorithmic detail of the individual operations.

2.8   Encapsulation of attributes and operations inside objects makes it easy to obtain object state information during testing.

2.9   Random order tests are conducted to exercise different class instance life histories.

2.10 Multiple class testing is too complex to be tested using random test cases.

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
	X		**Y**
3.1	Boundary value analysis	**A.**	Developers' site
3.2	non-functional software testing	**B.**	Big Bang Testing
3.3	Alpha testing	**C.**	CMM Level 3
3.4	Integration	**D.**	Black Box testing
3.5	Management and Measurement	**E.**	CMM Level 2
3.6	AdHoc testing is a part of	**F.**	True
3.7	Phase Definition	**G.**	User's site
3.8	Type of Integration Testing	**H.**	Performance Testing
3.9	Open box testing	**I.**	Exploratory Testing
3.10	Beta Testing	**J.**	Closed box testing
		K.	CMM Level 1
		L.	White box testing
		M.	CMM Level 4

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.	True	B.	Two	C.	Major Project Status Report
D.	Process metric	E.	Four	F.	black-box testing
G.	Product metric	H.	White-box testing	I.	Module Testing
J.	Unreachable Code	K.	Testing	L.	Indirect Project Status Report
M.	False				

4.1 _____ the reporting process is very important because software tools are being upgraded, and manual supporting activities sometimes break down.

4.2 _____ reports provide information related to a specific project component.

4.3 _____ measure the characteristics of the documentation and code.

4.4 _____ categories of data will be collected during testing.

4.5 _____ categories of testing techniques can be used in acceptance testing.

4.6 The testing technique that requires devising test cases to demonstrate that each program function is operational is called _____.

4.7 The testing technique that requires devising test cases to exercise the internal logic of a software module is called _____.

4.8 _____ occupies unnecessary memory.

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

4.10 _____ is a risk-oriented activity in which resources should be expended to minimize the major risks.

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

5.
a) Differentiate top down approach and bottom up approach? Describe bottom up approaches in Regression testing?
b) What is the purpose of software testing? Explain the general guidelines for performing a software testing?
c) Define SDLC? Explain Waterfall model in detail?

(5+5+5)

6.
a) Explain WHITE BOX TESTING? What are the types of White box testing?
b) Compare Integration testing and Regression testing give example.
c) Define BLACK BOX TESTING? What are the types and explain any one of them?

(5+5+5)

7.
a) What is SPICE? How SPICE standard is useful in software Industry?
b) Compare software verification and software validation. When are verification and validation performed during the software life cycle?
c) Bring out the difference between ISO 9000 and SEI CMM quality model.

(5+5+5)

8.
a) How can Software Quality Assurance (SQA) processes be implemented without reducing productivity?
b) Explain the key process areas associated with the five levels of Capability Maturity Model (CMM).
c) List and explain the various Software Quality Assurance activities?

(5+5+5)

9.
a) What do you understand by the term Software Quality? List important attributes of Quality, which all software product should have. Explain each of them.
b) Explain in detail about IDE?
c) Define the following term.
   i)   Risk-based testing
   ii) Beta testing
   iii) RAD
   iv) V-Model
   v)   Test coverage

(5+5+5)