

Sl. No.

**BE7-R4 : SOFTWARE TESTING AND QUALITY MANAGEMENT**

**DURATION : 03 Hours**

**MAXIMUM MARKS : 100**

OMR Sheet No. :

Roll No. :

Answer Sheet No. :

Name of Candidate : \_\_\_\_\_ ; Signature of Candidate : \_\_\_\_\_

**INSTRUCTIONS FOR CANDIDATES :**

- Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
- Question Paper is in English language. Candidate has to answer in English language only.
- There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
- **PART ONE** is Objective type and carries **40** Marks. **PART TWO** is Subjective type and carries **60** Marks.
- **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 for **PART TWO**.
- 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** to the Invigilator.
- **Candidate cannot leave the examination hall/room without signing on the attendance sheet and handing over his/her Answer Sheet to the invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.**
- After receiving the instruction to open the booklet and before answering the questions, the candidate should ensure that the Question Booklet is complete in all respect.

**DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.**

## PART ONE

(Answer ALL Questions; each question carries ONE mark)

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. Black-Box testing is :
    - (A) Functional testing technique
    - (B) Non-functional testing technique
    - (C) Both (A) and (B)
    - (D) None of the above
  - 1.2. Software review testing is :
    - (A) Static testing technique
    - (B) System testing technique
    - (C) Dynamic testing technique
    - (D) None of the above
  - 1.3. Sequence of phases in STLC are :
    - (A) Requirement Analysis, Test Planning, Test Environment setup, Test case development, Test Execution, Test Cycle closure
    - (B) Requirement Analysis, Test Planning, Test case development, Test Environment setup, Test Execution, Test Cycle closure
    - (C) Requirement Analysis, Test case development, Test Planning, Test Environment setup, Test Execution, Test Cycle closure
    - (D) Requirement Analysis, Test Environment setup, Test Planning, Test case development, Test Execution, Test Cycle closure
  - 1.4. Which of the following is not a White-box testing technique ?
    - (A) Statement coverage
    - (B) Path testing
    - (C) Decision table
    - (D) None of the above
  - 1.5. Mutation testing is done :
    - (A) To find the errors
    - (B) To measure the adequacy of test cases
    - (C) Both (A) and (B)
    - (D) None of the above
  - 1.6. Identify the stage in which test cases are designed.
    - (A) Test planning
    - (B) Test configuration
    - (C) Test specification
    - (D) Test recording

1.7. Regression testing is performed for :

- (A) Passed test cases
- (B) Failed test cases
- (C) Defect verification
- (D) All of the above

1.8. Acceptance testing is performed by :

- (A) Testers
- (B) Software developers
- (C) Users
- (D) All the above

1.9. Which of the following type of testing is done without Planning and Documentation ?

- (A) Unit testing
- (B) Monkey testing
- (C) Adhoc testing
- (D) Retesting

1.10. If a company decides to migrate from Windows XP to Windows 7, which type of testing is done to ensure that whether your software works on new platform ?

- (A) Interoperability Testing
- (B) Portability Testing
- (C) Usability Testing
- (D) Performance Testing

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein.

(1x10)

- 2.1. Cyclomatic complexity measures number of linearly dependent paths.
- 2.2. Validation is a dynamic mechanism of validating and testing the actual product.
- 2.3. CMM Level 3 focus on Project Management.
- 2.4. The test case log is used to keep track of the status of each test case.
- 2.5. Tester can start the requirement matrix after approval of requirement document.
- 2.6. Quality control and quality assurance are same activity.
- 2.7. Business process-based testing is used in system testing and acceptance testing.
- 2.8. Data defects can occur when accessing the programs data log files.
- 2.9. Test drivers are used to simulate the behaviour of the upper-level modules that are not yet integrated.
- 2.10. Mutation testing does not require structure of the code to guide the testing process.

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	Functional Testing	A.	Black-box
3.2	Structural testing technique	B.	Verification
3.3	To fix defects	C.	Negative
3.4	Human mistake	D.	White-box
3.5	Static testing technique	E.	Specification
3.6	Tests aimed at showing that a component or system does not work	F.	Inclusive
3.7	Evaluating products of development Phase	G.	Stress
3.8	Performance testing	H.	Error
3.9	Testing technique applied for usability testing	I.	Debugging
3.10	When atleast one cause can be true at a time in cause effect graph	J.	Review
		K.	Unit testing
		L.	Quality assurance
		M.	Dataflow modeling

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

A.	limited-entry	B.	regression	C.	Control	D.	failure
E.	dynamic	F.	worst case test cases	G.	Assurance	H.	logical
I.	Integration	J.	Suite	K.	interface	L.	system
M.	test tools						

- 4.1. \_\_\_\_\_ is BVA technique having  $(5^n)$  number of test cases.
- 4.2. A logical collection of test cases which naturally work together is called as Test \_\_\_\_\_.
- 4.3. Quality \_\_\_\_\_ addresses the quality of the process.
- 4.4. Testing that involves the execution of the software of a component or system is called \_\_\_\_\_.
- 4.5. \_\_\_\_\_ are the types of errors uncovered by White box testing.
- 4.6. Main purpose of Integration testing is to find \_\_\_\_\_ types of errors.
- 4.7. \_\_\_\_\_ Decision table contain boolean values.
- 4.8. \_\_\_\_\_ testing is performed when the software or its environment is changed.
- 4.9. Actual deviation of the component or system from its expected delivery, service or result is called \_\_\_\_\_.
- 4.10. Non-functional testing is performed at \_\_\_\_\_ level of testing.

**PART TWO**

**(Answer ANY FOUR questions)**

5. (a) Explain the difference between Static testing and Dynamic testing. Discuss one technique of each.
- (b) Differentiate between error, fault and failure through an example.
- (c) Why exhaustive testing is not possible ? Give reasons.

**(5+5+5)**

6. (a) Why is Integration testing done ? List the errors detected during integration testing.
- (b) What are the limitations of Boundary value analysis ? Suggest an effective testing technique to overcome the Boundary value analysis limitation.
- (c) What is limited entry decision table ? Give example. What is don't care condition ?

**(5+5+5)**

7. (a) Briefly discuss V and V model.
- (b) What do you mean by proof of correctness ? Why it is required ?
- (c) Differentiate between inspection and walkthroughs.

**(5+5+5)**

8. (a) What is data flow testing ? Why is it performed ? "All dc-clear paths are not dc-clear paths". Comment.
- (b) Differentiate between branch coverage and condition coverage through an example.
- (c) Write the test case template.

**(7+5+3)**

9. (a) What is stress testing ? How is it different from load testing ? Give example of each.
- (b) What are the 5 levels of CMM ? Which CMM level is best ?
- (c) Why is debugging done ? List different steps of debugging.

**(5+5+5)**

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**SPACE FOR ROUGH WORK**

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