B2.52-R4 : SOFTWARE TESTING AND QUALITY MANAGEMENT

अवधिः 03 घंटे
DURATION: 03 Hours

अधिकतम अंकः **100**
MAXIMUM MARKS: 100

ओएमआर शीट सं.:					
OMR Sheet No.:					

रोल नं.:
Roll No.:

उत्तर-पुस्तिका सं.:
Answer Sheet No.:

परीक्षार्थी का नामः
Name of Candidate: _____

परीक्षार्थी के हस्ताक्षरः
Signature of Candidate: _____

परीक्षार्थियों के लिए निर्देशः

Instructions for Candidates:

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर–पुस्तिका में दिये गए निर्देशों को ध्यान पूर्वक पढ़ें।	Carefully read the instructions given on Question Paper, OMR Sheet and Answer Sheet.
प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर कर सकता है।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के **दो भाग** है । **भाग एक** में **चार** प्रश्नऔर **भाग दो** में **पाँच** प्रश्नहै।	There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 है तथा **भाग दो**, "व्यक्तिपरक" प्रकार है और इसके कुल अंक 60 है।	**PART ONE** is Objective type and carries 40 Marks. **PART TWO** is subjective type and carries 60 Marks.
भाग एक के उत्तर, इस प्रश्न-पत्र के साथ दी गई **ओएमआर उत्तर-पुस्तिका** पर, उसमें दिये गए अनुदेशों के अनुसार ही दिये जाने है । **भाग दो** की उत्तर-पुस्तिका में **भाग एक** के उत्तर **नहीं** दिये जाने चाहिए।	**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**.
भाग एक के लिए अधिकतम समय सीमा **एक घण्टा** निर्धारित की गई है । **भाग दो** की उत्तर-पुस्तिका, **भाग एक** की उत्तर-पुस्तिका जमा कराने के पश्चात दी जाएगी। तथापि, निर्धारित एक घंटे से पहले **भाग एक** पूरा करने वाले परीक्षार्थी **भाग एक** की उत्तर-पुस्तिका निरीक्षक को सौंपने के तुरंत बाद, **भाग दो** की उत्तर-पुस्तिका ले सकते हैं।	Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer bookfor **PART TWO** will be supplied atthe table when the answer sheet for **PART ONE** is returned. However, candidateswho 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**.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हाल नहीं छोड़ सकते हैं । ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अयोग्य घोषित कर दिया जाएगा।	**Candidate cannot leave the examination hall/room without signing on the attendance sheet or handing over his Answer sheet to the invigilator. Failing in doing so, will amount to disqualification of Candidate in this Module/Paper.**
प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात एवं उत्तर देने से पहले उम्मीदवार यह जाँच कर यह सुनिश्चित कर ले कि प्रश्न-पुस्तिका प्रत्येक दृष्टिसे संपूर्ण है।	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.

जब तक आपसे कहा न जाए, तब तक प्रश्न-पुस्तिका न खोलें।
DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.

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 "OMR" answer sheet supplied with the question paper, following instructions therein. (1×10)

1.1 Each time a defect gets detected and fixed, the reliability of a software product
   (A) increases.
   (B) decreases.
   (C) remains constant.
   (D) cannot say anything.

1.2 Site for Alpha Testing is
   (A) Software Company
   (B) Installation place
   (C) Any where
   (D) None of the options

1.3 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.

1.4 Test are prioritized so that
   (A) You shorten the time required for testing
   (B) You do the best testing in the time available
   (C) You do more effective testing
   (D) You find more faults

1.5 Data integrity stands for
   (A) thoroughly validated data
   (B) data stored in different places showing consistency
   (C) data fields integrated to provide summary
   (D) None of the options

1.6 Which of these can be successfully tested using Loop Testing methodology ?
   (A) Simple Loops
   (B) Nested Loop
   (C) Concatenated Loops
   (D) All of the options

1.7 Requirements Specification, Planning, Test case Design, Execution, Bug Reporting & Maintenance. This Life Cycle comes under:
   (A) SDLC
   (B) STLC
   (C) SQLC
   (D) BLC

1.8 Management and Measurement, it will come under
   (A) CMM Level 1
   (B) CMM Level 3
   (C) CMM Level 4
   (D) CMM Level 2

1.9 Software testing techniques are most effective if applied immediately after
   (A) Requirement specification
   (B) Design
   (C) Coding
   (D) Integration

1.10 Which of the following statistical tools are 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

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. (1×10)**

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 must 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 "OMR" answer sheet supplied with the question paper, following instructions therein.** (1×10)

	X		Y
3.1	WinRunner	**A.**	A small information stored in the system
3.2	TestDirector	**B.**	Detecting defects in products and services
3.3	SQL Injection	**C.**	Determine at what point the system's response time degrades or fails
3.4	Brute Force Attack	**D.**	A framework for the assessment of software processes
3.5	Quality Assurance	**E.**	Tell which problems occur most often
3.6	Quality Control	**F.**	Manages test scripts, defects and test plan
3.7	Load Testing	**G.**	A malicious user could provide unexpected inputs to the application
3.8	Cookie	**H.**	Handles automation test scripts
3.9	Pareto analysis	**I.**	Prevention of introduction of defects
3.10	SPICE	**J.**	Software attempts to guess the associated password by trying to login again and again
		K.	A way/method to ascertain software efficiency
		L.	To eliminate redundant functionality
		M.	Tool to comment on Application Security

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.** **(1×10)**

A.	Project plan	B.	Driver	C.	Proxy
D.	Error guessing	E.	Data flow analysis	F.	Black Box
G.	Test set	H.	Inspections	I.	Procedure
J.	Document Generator	K.	Test Plan module	L.	Loop Testing
M.	Stub				

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

4.2   _____ of the following is a static testing technique.

4.3   Nested Loops can be successfully tested using _____.

4.4   The programmer use _____ to write a program step-by-step.

4.5   Quality Center enables you to generate graphs from the_____.

4.6   You use Live Analysis graphs to view data that relates to a _____ folder.

4.7   The _____ enables you to create a hard copy of the data contained in a Quality Center project.

4.8   Purpose of _____ is to find how much of the code has been covered.

4.9   _____ testing is a technique appropriate for all levels of testing.

4.10   The inputs for developing a test plan are taken from _____.

PART TWO
(Answer any FOUR questions)

5. (A) Briefly explain the common features of key practices in the CMM model.

   (B) What are the limitations of control flow–based testing ?

   (8+7)

6. (A) Briefly explain the ISO 9000:2000 (Fundamental) document for quality assurance.

   (B) What is total quality management (TQM) ? What is the difference between TQM and TQC ?
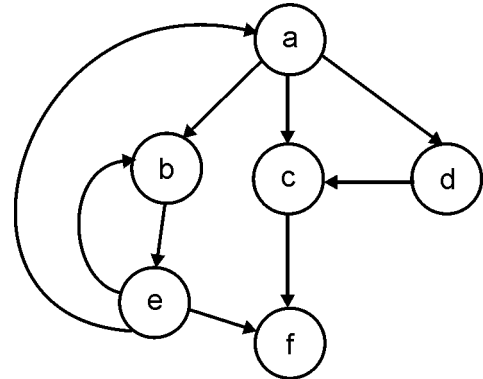
   (8+7)

7. Write short notes on the following :

   (A) Equivalence partitioning

   (B) Decision Table

   (C) CMM

   (5+5+5)

8. (A) What is Debugging by Induction ? Explain

   (B) What is Quality ? How is software quality evaluated ? Explain.

   (8+7)

9. (A) Explain how to design test cases using boundary value analysis using an example.

   (B) Find and list the number of independent paths in the flow graph given below :

   (7+8)

SPACE FOR ROUGH WORK