

Sl. No.

B2.52-R4 : SOFTWARE TESTING AND QUALITY MANAGEMENT

अवधि : 03 घंटे

DURATION : 03 Hours

अधिकतम अंक : 100

MAXIMUM MARKS : 100

ओएमआर शीट सं. :
OMR Sheet No. :

रोल नं. :

Roll No. :

उत्तर-पुस्तिका सं. :

Answer Sheet No. :

परीक्षार्थी का नाम :

Name of Candidate :

परीक्षार्थी के हस्ताक्षर :

Signature of Candidate :

परीक्षार्थियों के लिए निर्देश :**Instructions for Candidate :**

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यानपूर्वक 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 दे सकता है।	Question Paper is in English language. Candidate can answer in English language only.
इस मॉड्यूल/पेपर के दो भाग हैं। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न हैं।	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 हैं तथा भाग दो "व्यक्तिपरक" प्रकार का है और इसके कुल अंक 60 हैं।	PART ONE is Objective type and carries 40 Marks. PART TWO is Subjective type and carries 60 Marks.
भाग एक के उत्तर, ओएमआर उत्तर-पुस्तिका पर ही दिये जाने हैं। 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. 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 पश्चात् 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 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.
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना और अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हॉल/कमरा 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 and handing over his/her 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 पश्चात् एवं उत्तर लिखना आरम्भ करने से पहले उम्मीदवार जाँच कर यह सुनिश्चित कर लें कि प्रश्न-पुस्तिका प्रत्येक दृष्टि से संपूर्ण है।	After receiving the instruction to open the booklet and before starting to answer 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.

(1x10)

1.1 To overcome the risk, we prepare :

- (A) Migration Plan
- (B) Master Plan
- (C) Maintenance Plan
- (D) Mitigation Plan

1.2 _____ measure how severely a bug effects the application.

- (A) Severity
- (B) Priority
- (C) Fixability
- (D) Traceability

1.3 Select the correct sequence of Software Process Cycle.

- (A) Plan(P)----->Check(C)----->Act(A)
----->Do(D)
- (B) Plan(P)----->Do(D)----->Check(C)
----->Act(A)
- (C) Plan(P)----->Do(D)----->Act(A)
----->Check(C)
- (D) None of the options

1.4 CMM _____ defines Optimization, Defect Prevention, and Quality Control.

- (A) CMM Level 2
- (B) CMM Level 3
- (C) CMM Level 4
- (D) CMM Level 5

1.5 _____ is a testing done jointly by developers, testers, DBA's and network associates after the system Testing.

- (A) Functional Testing
- (B) Stress/Load Testing
- (C) Recovery Testing
- (D) Integration Testing

1.6 The Software Development model that starts using Testing activities at the time of development itself is :

- (A) Water falls model
- (B) Spiral model
- (C) V - model
- (D) Linear model

1.7 The name of the testing performed to make sure that the existing features are not affected by new changes is :

- (A) Recursive testing
- (B) Whitebox testing
- (C) Unit testing
- (D) Regression testing

1.8 Management and Measurement falls under CMM Level _____.

- (A) CMM Level 1
- (B) CMM Level 3
- (C) CMM Level 4
- (D) CMM Level 2

1.9 AdHoc testing is a part of :

- (A) Unit Testing
- (B) Regression Testing
- (C) Exploratory Testing
- (D) Performance Testing

1.10 _____ is an environment (Hardware, software set up) to see that the application will run smoothly.

- (A) Test Bed
- (B) Checkpoint
- (C) Code Walk through
- (D) Checklist

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

(1x10)

2.1 Alpha testing is a testing done usually at User site.

2.2 Automation Testing is a testing done before beginning Manual testing.

2.3 Equivalence class testing creates group of test classes.

2.4 Product Metric is not a valid category of software metrics.

2.5 Risks are situations affecting the organization developing or procuring the software.

2.6 Stratification is a process to divide data into homogeneous groups.

2.7 It is better to find the defects earlier in software life cycle.

2.8 Control Charts is a statistical technique to assess, monitor, and maintain the stability of a process.

2.9 Software Testing is a process of evaluating a system by manual or automatic means.

2.10 Cost estimation of software is impossible.

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	Validation	A.	Quality assurance process
3.2	Robustness testing	B.	Boundary value analysis is helpful
3.3	Mutation testing	C.	White Box
3.4	SEI-CMM Level 3	D.	Brute Force
3.5	COCOMO model	E.	$6n+1$
3.6	Structured charts are a product of	F.	Steps to detect and correct errors
3.7	CASE Tool	G.	9001
3.8	ISO quality assurance standard that applies to software engineering	H.	Computer Aided Software Engineering
3.9	Debugging with a storage dump	I.	end of development process
3.10	Multiple-condition coverage	J.	Constructive Cost Estimation Model
		K.	fault based technique
		L.	Integration
		M.	design

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 "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

A.	Bottom Up approach	B.	Access Control	C.	Grey box
D.	Branch coverage	E.	Testability	F.	Load testing
G.	Document Generator	H.	Portability	I.	independent path
J.	ISO 9000	K.	Induction	L.	White Box Testing
M.	Equivalence Partitioning				

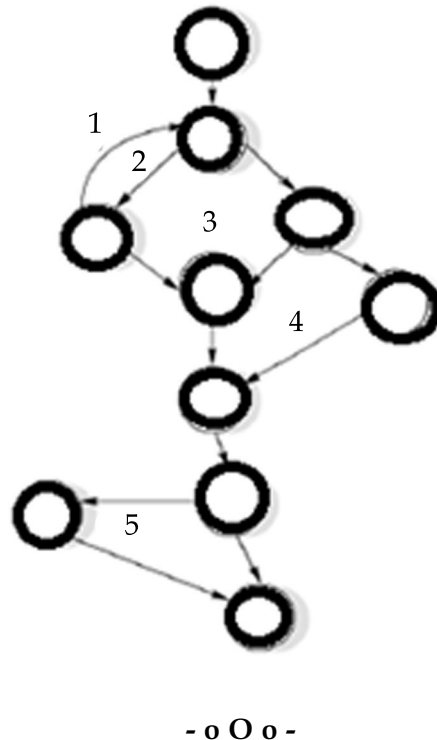
- 4.1 Method typically used to reduce the total number of test cases to a finite set of testable test case is _____.
- 4.2 The strategy that often resembles a "seed" model, whereby the beginnings are small, but eventually grow in complexity and completeness, is known as _____.
- 4.3 The testing technique that requires devising test cases to exercise the internal logic of a software module is called _____.
- 4.4 The _____ enables you to create a hard copy of the data contained in a Quality Center project.
- 4.5 _____ Effort required to transfer a program from one hardware and/or software environment to another.
- 4.6 _____ provisions for control and protection of the software and data.
- 4.7 _____ document is about fundamentals and vocabulary.
- 4.8 _____ is where you move from the particulars of a situation to the whole.
- 4.9 A(n) _____ is any path through the program that introduces at least one new set of processing statements or a new condition.
- 4.10 _____ is famously known as endurance testing and volume testing.

PART TWO

(Answer any four questions)

5. (a) What is Null dereferencing ? Give an example.
- (b) Discuss the various software testing principles.
- (c) What is a Graph Matrix ? Explain with an example. (5+5+5)
6. (a) What are Buffer Underflow/ Overflow ?
- (b) What are the possibilities of Data Declaration errors ?
- (c) Explain debugging with a storage dump. (5+5+5)
7. (a) What is a Software Walk through ? What are its objectives and participants involved in it ?
- (b) Differentiate between function oriented design and object oriented design.
- (c) What are the external sources of errors ? What are the possible ways to rectify them ? (5+5+5)

8. (a) Briefly explain the relationship between Quality Factors and Criteria.
- (b) Briefly explain the ISO 9000:2000 (Fundamental) document for quality assurance. (7+8)
9. (a) Consider a program for determining the Previous date. Its input is a triple of day, month and year with the values in the range <1 to 12 month>, <1 to 31 days> and <1900 to 2025 year>. The possible outputs would be Previous date or invalid input date. Design the boundary value test cases.
- (b) For the flow graph given below, calculate the cyclomatic complexity by all three methods. (7+8)



SPACE FOR ROUGH WORK

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