

A10.2-R4: SOFTWARE TESTING AND QUALITY MANAGEMNET**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 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 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 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, इस प्रश्न-पत्र के साथ दी गई ओएमआर उत्तर-पुस्तिका पर, उसमें दिये गए अनुदेशों के अनुसार 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, 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 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 .
परीक्षार्थी, उपस्थिति-पत्रिका पर हस्ताक्षर किए बिना एवं अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हाल नहीं छोड़ सकता है। 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 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 दृष्टि से 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. (1x10)

1.1 What is correct 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 above

1.2 Conducted to validate that the application, database, and network they may be running on can handle projected volumes of users and data effectively. The test is conducted jointly by developers, testers, DBA's and network associates after the system Testing called as

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

1.3 Which Software Development Life cycle model will require to start Testing Activities when starting development activities itself

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

1.4 How severely the bug is effecting the application is called as

- A) Severity B) Priority
C) Fix ability D) Traceability

1.5 The name of the testing which is done to make sure the existing features are not affected by new changes

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

1.6 Management and Measurement, It will come under

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

1.7 AdHoc testing is a part of

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

1.8 _____ means under what test environment (Hardware, software set up. the application will run smoothly

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

1.9 Optimization, Defect Prevention, and Quality Control. It's come under the

- A) CMM Level 2 B) CMM Level 3
C) CMM Level 4 D) CMM Level5

1.10 A Plan to overcome the risk called as
A) Migration Plan B) Master plan
C) Maintenance plan D) Mitigation Plan

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 Path Tested = Number of Path Tested / Total Number of Paths

2.2 Business Risk affects the Organization developing or Procuring the software.

2.3 Stratification is a technique used to analyze/divide a universe of data into homogeneous groups or strata.

2.4 Automation Testing should be done before starting manual testing. Is the above statement correct?

2.5 Earlier a defect is found the cheaper it is to fix it. Is the above statement correct?

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

2.7 Software Testing is a process of evaluating a system by manual or automatic means and verify that it satisfies specified requirements or identity differences between expected and actual results.

2.8 Testing Maturity Model provides a set of levels and an assessment model, and presents a set of recommended practices that allow organizations to improve their testing processes.

2.9 Product Metric is an Important metric is the number of defects found in internal testing compared to the defects found in customer tests, Status of test activities against the plan, Test coverage achieved so far, comes under.

2.10 Alpha testing will be done at User site.

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. Choose the most appropriate option; enter your choice in the "OMR" answer sheet supplied with the question paper, following instructions therein. (1x10)

A.	Bottom Up approach	B.	Control Flow Graph	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.

(4+4+7)

7.

- a) What is a Software Walkthrough? What are its objectives and participants involved in it?
- b) Differentiate between function oriented design and object oriented design.
- c) Explain some of the limitations of testing.

(7+5+3)

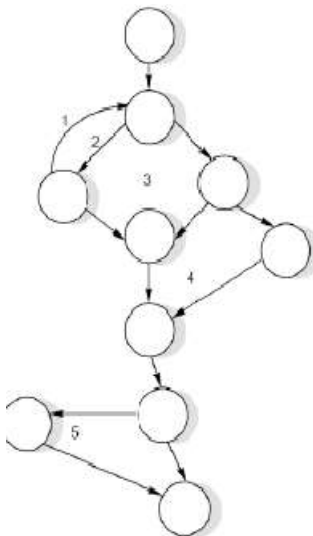
8.

- 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)

