

BE7-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.:

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Roll No.:

उत्तर-पुस्तिका सं.:

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Answer Sheet No.:

परीक्षार्थी का नाम: _____; परीक्षार्थी के हस्ताक्षर: _____
Name of Candidate: _____; 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 कर 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 अथवा अपनी उत्तर-पुस्तिका, निरीक्षक को सौंपे बिना, परीक्षा हाल नहीं छोड़ सकता है। ऐसा नही 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 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 Which is the reputed testing standard?
A) M Bridge awards B) QAI
C) ISO D) Microsoft
- 1.2 You are performing a test to see that it complies with the user requirement that a certain field be populated by using a drop down box containing a list of values. What kind of testing are you doing?
A) White box testing B) Black box testing
C) Load testing D) Regression testing
- 1.3 Test Readiness review is conducted by the
A) Project Manager
B) Test Manager
C) Quality Assurance Personnel
D) User/Customer
- 1.4 If the measurement taken by the two people are same refers to the terms as
A) Reliability
B) Validity
C) Calibration
D) Ease of use and simplicity
- 1.5 Which testing is concerned with behavior of whole product as per specified requirements?
A) Acceptance testing B) Component testing
C) System testing D) Integration testing
- 1.6 Who is responsible for component testing?
A) Software tester B) Designer
C) User D) Developer
- 1.7 Which of the following is not other name for structural testing?
A) White box testing B) Glass box testing
C) Behavioral testing D) None of the option
- 1.8 What are the types of requirement in Quality Function Deployment (QFD)?
A) Known, Unknown, Undreamed
B) User, Developer
C) Functional, Non-Functional
D) Normal, Expected, Exciting
- 1.9 What kind of approach was introduced for elicitation and modelling to give a functional view of the system?
A) Object Oriented Design (by Booch)
B) Use Cases (by Jacobson)
C) Fusion (by Coleman)
D) Object Modeling Technique (by Rumbaugh)

- 1.10 FAST stands for
A) Functional Application Specification Technique
B) Fast Application Specification Technique
C) Facilitated Application Specification Technique
D) None of the mentioned

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 The two types of incremental testing approaches are top down and bottom up approach.
- 2.2 CMMi has not an interactive lifecycle when compared to CMM.
- 2.3 Black box testing is only functional testing.
- 2.4 Non functional testing is performed only at system testing level.
- 2.5 Sometimes regression testing is best candidate for automation.
- 2.6 Configuration testing deals with hardware while compatibility testing deals with software.
- 2.7 Software Reliability is the probability of failure-free software operation for a specified period of time in a specified environment.
- 2.8 Software tester should be involved very early during development phase of a project.
- 2.9 Testing a functionality of software has two parts, requirement specification testing and business process based testing.
- 2.10 Equivalence partitioning and boundary value analysis techniques are used only during system testing.

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	Data Definition	A.	Data relationship model simplified for data extraction and reduction purposes in order to create test data.
3.2	Fault	B.	A test environment comprised of stubs and drivers needed to conduct a test.
3.3	Control Flow	C.	A manifestation of an error in software
3.4	Data Use	D.	Nonconformance to requirements or functional / program specification
3.5	Defect	E.	The set from which values are selected.
3.6	Harness	F.	An executable statement where the value of a variable is accessed.
3.7	Domain:	G.	An executable statement where a variable is assigned a value.
3.8	Basic Block	H.	Forming a conclusion from existing facts.
3.9	Basis TestSet	I.	An abstract representation of all possible sequences of events
3.10	Component	J.	A minimal software item for which a separate specification is available.
		K.	A set of test cases derived from Basis Path Testing.
		L.	A sequence of one or more consecutive, executable statements containing no branches.
		M.	A mistake that produces an incorrect result.

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.	Quality Assurance	B.	White-box	C.	Big Bang Testing
D.	Verification	E.	Software Reengineering	F.	Quality Assurance
G.	Validation	H.	Reverse Engineering	I.	Incremental
J.	Black-box	K.	Requirements analysis.	L.	Quality Control
M.	Module integration				

- 4.1 The definition phase of software engineering includes tasks such as system engineering, software project planning and _____.
- 4.2 The _____ method is also known as the iterative enhancement model.
- 4.3 _____ includes activities that ensure the verification of a developed software with respect to documented.
- 4.4 _____ includes activities that ensure the implementation of processes, procedures and standards in context to verification of developed software and intended requirements.
- 4.5 _____ is a process to achieve system specification by thoroughly analyzing, understanding the existing system.
- 4.6 _____ need to update the software to keep it to the current market, without impacting its functionality.
- 4.7 _____ testing is conducted to test program and its implementation, in order to improve code efficiency or structure.
- 4.8 _____ testing is carried out to test functionality of the program.
- 4.9 _____ is process of examining whether or not the software satisfies the user requirements.
- 4.10 _____ is the process of confirming if the software is meeting the business requirements.

PART TWO
(Answer any FOUR questions)

- 5.**
- a) What are the Advantages and disadvantages of top-down and bottom-up software testing approach?
 - b) What is STLC (Software Testing Life Cycle)? Explain different phases of STLC.
 - c) Compare different phases of software development life cycle and software testing life cycle.
- (5+7+3)**

- 6.**
- a) Compare Black-Box Testing, Grey-Box Testing and White-Box Testing.
 - b) What is White-Box Testing? Explain Cyclomatic Complexity testing with example.
 - c) Explain various types of static and dynamic testing tools.
- (5+5+5)**

- 7.**
- a) What is Black-box testing? Explain Equivalence Partitioning testing with example.
 - b) Difference between Verification and Validation with Example.
 - c) What is Difference between Quality Assurance (QA) and Quality Control (QC)?
- (5+5+5)**

- 8.**
- a) What is Negative Testing? What are the advantages of negative testing?
 - b) How to Write Effective Test Cases and Procedures?
 - c) Explain the differences between testing and debugging.
- (5+5+5)**

- 9.**
- a) What is Capability Maturity Model? Describe its different levels.
 - b) Give Comparison between Automation Testing and manual testing.
 - c) What is User Acceptance Testing? What are the main problems facing in User Acceptance Testing (UAT)?
- (5+5+5)**
