



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MCA
(SEM III) THEORY EXAMINATION 2024-25
SOFTWARE TESTING & QUALITY ASSURANCE

TIME: 3 HRS**M.MARKS: 100**

Note: Attempt all Sections. In case of any missing data, choose suitably.

SECTION A**1. Attempt all questions in brief.****2 x 10 = 20**

Q no.	Question	CO	Level
a.	Differentiate between verification and validation.	1	1
b.	What is error, fault and failure?	1	1
c.	Discuss the concept of debugging.	2	2
d.	What are the steps involved in test case design.	2	1
e.	Write different popular debugging approaches.	3	2
f.	What is ISO? Explain ISO model.	3	1
g.	Explain the concept of BVA(boundary value analysis) and ECP(equivalence class partitioning).	4	2
h.	Explain points for good code writing practices.	4	2
i.	Explain the term SQA and components of SQA.	5	2
j.	Explain Taguchi Quality loss function.	5	2

SECTION B**2. Attempt any three of the following:****10 x 3 = 20**

Q no.	Question	CO	Level
a.	Illustrate all necessary steps of purchasing a product from an e-commerce website. Generate test cases using class testing.	1	3
b.	What is the cause-effect graphing technique? What are basic notations used in a cause effect graph? Why and how are constraints used in such a graph?	2	1
c.	Explain defect injection and how you will insert defect in code	3	2
d.	Explain the various steps of the regression testing process. Which step is the most important and why?	4	2
e.	Zero Defect Software is dependent on the definition of test adequacy criteria. Comment and illustrate your view.	5	3

SECTION C**3. Attempt any one part of the following:****10 x 1 = 10**

Q no.	Question	CO	Level
a.	Explain various “features and characteristics” of software that define its quality?	1	2
b.	Explain the following: (i) Peer views (ii) Walkthroughs (iii) Inspections	1	2



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MCA
(SEM III) THEORY EXAMINATION 2024-25
SOFTWARE TESTING & QUALITY ASSURANCE

TIME: 3 HRS**M.MARKS: 100**

4. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Compare each phase of SDLC & STLC in detail with diagram.	2	3
b.	Consider a program to multiply and divide two numbers. The inputs may be two valid integers (say a & b) in the range of [0, 100]. (i) Create equivalence class and generate test cases (ii) Develop a decision table and generate test cases (iii) Design a cause-effect graph and write test cases accordingly.	2	3

5. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Illustrate the SQA architecture with its components. Should QA's resolve production issues?	3	3
b.	Explain the following: (i) Modification traversing test cases (ii) Modification revealing test cases	3	2

6. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Illustrate the SQA architecture with its components. Should QA's resolve production issues?	4	3
b.	Calculate to maximize the function $f(X)=X^2$. Using Genetic algorithm, where X varies between 1 and 32. Consider initial population of size 4.	4	3

7. Attempt any one part of the following: 10 x 1 = 10

Q no.	Question	CO	Level
a.	Demonstrate various levels of testing? Which testing level is easy to test and why?	5	3
b.	What is CMM? Explain in detail. Compare CMM with CMMI.	5	1