(2 ½ Hours) **[Total Marks: 75]**

N.B. 1) All questions are compulsory.
2) Figures to the right indicate marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

Q. 1 Attempt All (Each of 5Marks) **(15M)**

(a) Multiple Choice Questions.

1. What do you understand by V&V in software testing?
a) Verified Version b) Version Validation
c) Verification and Validation d) Version Verification.

2. Which of the following is not a core step of Six Sigma?
a) Define b) Control c) Measure d) Analyse

3. Which of the following is a black box testing strategy?
a) All Statements Coverage b) Control Structure Coverage
c) Cause-Effect Graphs d) All Paths Coverage

4. In Which of the following situation defects will arise?
a) No knowledge of system b) System is used in wrong way
c) May have coded wrongly d) All the above

5. Which of the following is not a part of a test design document?
a) Test Plan
b) Test Design Specification
c) Test Case Specification
d) Test Log

(b) Fill in the blanks

(Boundary value analysis , Test Driver, Unit testing, Stress testing, Test Specification, Test Planning,Cohesion, Coupling , NEW or OPEN, FIXED)

1. _____ is normally considered as an adjunct to the coding step.
2. _____ is a form of functional testing.
3. Test cases are designed in _____ phase.
4. _____ is an indication of the relative interdependence among modules.
5. When a tester finds a bug .The bug is assigned with _____ status.

(c) Short Answers.

1) Define verification. According to Pareto's principle, x% of defects can be traced to y% of all causes.
2) What are the values of x and y?
3) Define software Metrics.
4) What is Defect reporting?
5) What is scattered diagram?

Q. 2 Attempt the following (Any THREE)(Each of 5Marks) (15M)

(a) What is software testing? Explain testing principles.
(b) Define following terms: QA, QC,QM
(c) Write note on 'Nature of errors'.
(d) Discuss software quality factors.
(e) Write in brief abut test case design.
(f) Write note on Black box testing.

Q. 3 Attempt the following (Any THREE) (Each of 5Marks) (15M)

(a) Explain 'Strategic approach to software testing.
(b) What is validation testing? Give example.
(c) Write note on unit testing.
(d) Explain the concept & role of software metrics.
(e) Explain cyclomatic complexity with example.
(f) How to use defects for process improvement?

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) (15)

(a) What is Quality movement?
(b) Explain any 5 quality assurance activities.
(c) What is Six Sigma? Explain its core steps.
(d) What is FTR? Discuss its objectives.
(e) State types of quality costs. Explain any one of them.
(f) Write note on Quality tools.

Q. 5 Attempt the following (Any THREE) (Each of 5Marks) (15)

(a) Discuss the phases of formal review.
(b) What are test plans and test cases? Explain with an example.
(c) Write a note on software reliability.
(d) Write in brief about defect life cycle.
(e) Explain SQA plan.

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