(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 (5M)
       1. 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
       2. According to Pareto's principle, x% of defects can be traced to y% of all causes. What are the values of x and y?
           a) 60, 40   b) 70, 30   c) 80, 20   d) No such principle exists
       3. Which of the following term describes testing?
           a) Finding broken code   b) A stage of all projects
            c) None of the mentioned   d) Evaluating deliverable to find error
       4. Boundary value analysis belongs to?
           a) Black Box Testing   b) White Box Testing
           c) White Box & Black Box Testing   d) None of the mentioned
       5. In DMAIC method of Six Sigma, C stands for?
           a)   Connect   b) Correct   c) Control   d) Cover

 (b)   Fill in the blanks (5M)
       (Verification, Minimum Time to Failure, Proof of Correctness, International Standard Organization, Validation, Run Chart, Mean Time to Failure, Proof of Identification, Indian Standard Organization, Scatter Chart)

       1. "Are we building the right product?" means_____.
       2. MTTF stands for_____.
       3. Formal Approaches to SQA involves_____.
       4. ISO means _____.
       5. _____ is a line graph of data plotted over time.

 (c)   Short Answers- Define the following:- (5M)
       1. Quality
       2. Software Testing
       3. Quality Assurance
       4. Defect Reporting
       5. Software Safety

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Q. 2   Attempt the following (Any THREE)(Each of 5Marks)   (15M)
 (a)   Explain any five desirable software qualities.
 (b)   Give the concept of Software reviews, Inspection and Walkthrough.
 (c)   List Black Box Testing types. Explain any two.
 (d)   Discuss levels of testing.
 (e)   Distinguish between Verification and Validation.
 (f)   Write a note on SDLC.

Q. 3   Attempt the following (Any THREE) (Each of 5Marks)   (15M)
 (a)   Write a note on Unit Testing.
 (b)   Explain categories of Software Metrics.
 (c)   Discuss Defect Management Process in detail.
 (d)   What are Smoke Testing and its benefits?
 (e)   Give the concept of Complexity Metrics.
 (f)   Explain Bottom-Up Integration testing.

Q. 4   Attempt the following (Any THREE) (Each of 5Marks)   (15M)
 (a)   Discuss any five guidelines for formal technical review.
 (b)   What are the advantages of ISO 9000 standards?
 (c)   Write a note on SQA plan.
 (d)   How to measure quality cost?
 (e)   What are the elements of software reliability? State factors affecting it.
 (f)   Write in brief about any three reliability metrics.

Q. 5   Attempt the following (Any THREE) (Each of 5Marks)   (15M)
 (a)   Differentiate between White Box and Black box testing
 (b)   How to use defects for process improvement?
 (c)   What are activities under quality movement?
 (d)   Explain Cyclomatic complexity with example.
 (e)   Write in brief about test case design. Give example.

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