(2½ Hours)

[Total Marks: 75]

N. B.: (1) **All** questions are **compulsory**.
      (2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
      (3) Answers to the **same question** must be **written together**.
      (4) Numbers to the **right** indicate **marks**.
      (5) Draw **neat labeled diagrams** wherever **necessary**.
      (6) Use of **Non-programmable** calculators is **allowed**.

1.   **Attempt _any three_ of the following:**   **15**
a.   Define the term quality and elaborate different views on quality.
b.   Explain the lifecycle of quality improvements
c.   What are the quality principles of Total Quality Management (TQM)?
d.   Explain the structure of quality management system.
e.   How the quality and productivity are related with each other?
f.   Write a short note on continual improvement cycle.

2.   **Attempt _any three_ of the following:**   **15**
a.   Explain the lifecycle of software testing.
b.   Write a note on requirement traceability matrix.
c.   State and explain any 5 principles of software testing.
d.   Explain the relationship between error, defect and failure with a proper example.
e.   Discuss the challenges in software testing.
f.   Describe the structure of a testing team.

3.   **Attempt _any three_ of the following:**   **15**
a.   Explain boundary value testing and its guidelines.
b.   Write a note on improved equivalence class testing.
c.   Describe the decision table testing technique in detail.
d.   Write a note on DD path testing.
e.   Explain the concept and significance of cause and effect graphing technique.
f.   Compare weak robust and strong robust equivalence class testing.

4.   **Attempt _any three_ of the following:**   **15**
a   Explain different methods of verification.
b   Explain the steps involved in management of verification and validation.
c   Describe the benefits of review technique.
d   List and explain how the formal review is carried out.
e   Explain the VV model of testing.
f   What are the roles and responsibilities of a reviewer

5.   **Attempt _any three_ of the following:**   **15**
a.   What is integration testing? Explain the Big bang approach.
b.   What is the need of a Security Testing?
c.   What is performance testing? List different types of performance testing.
d.   Explain the concept of inter system testing and its Importance.
e.   Explain the significance of Usability testing.
f.   Explain Commercial off-the-shelf software testing.

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