

(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.