

(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. Explain the principles of TQM in detail.
 - b. What do you mean by quality? Explain customer's view on quality.
 - c. Write a short note on continual improvement cycle.
 - d. What are the constraints of product quality assessment?
 - e. Explain relationship between quality and productivity.
 - f. Explain quality assurance elements in detail.
2. **Attempt any three of the following:** 15
 - a. What is a defect? What are the categories of defects?
 - b. Explain the basic principles on which the testing is based.
 - c. Write a short note on mutation testing.
 - d. Explain the process of developing by test methodology.
 - e. Explain types of prototyping software development model in detail.
 - f. What are the challenges faced by tester?
3. **Attempt any three of the following:** 15
 - a. What do you mean by random testing? Explain its advantages and disadvantages in detail.
 - b. Explain equivalence class testing concept with example and its types.
 - c. What do you mean by decision table? Explain with examples.
 - d. What is path testing? What are the features of path testing?
 - e. Write a short note on slice based testing.
 - f. What do you mean by define/use testing? Explain du and dc path.
4. **Attempt any three of the following:** 15
 - a. What are the different entities involved in verification?
 - b. Explain the concept of validation workbench in detail.
 - c. Explain testing during requirement stage.
 - d. Explain the V model for software.
 - e. What are the critical roles and responsibilities in verification and validation?
 - f. Explain types of reviews on the basis of stage/phase during development life cycle.

[Contd...]

5. Attempt any three of the following:

15

- a. Explain the different stages in requirement based testing.
 - b. Describe code review and unit testing process.
 - c. Write short notes on stress testing and recovery testing.
 - d. Explain the concept of critical path analysis (CPA) in detail.
 - e. Why do software organizations use commercially of the shelf software (COTS)? Explain COTS features in detail.
 - f. What is regression testing? Explain its importance in detail.
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