

(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:
- 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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