

(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 ANY FOUR from the following:

(20M)

- (a) What is quality assurance? Write down the purpose of the quality assurance.
- (b) Explain the concepts of Software Review, Inspection and Walkthrough.
- (c) Differentiate Between Verification and Validation.
- (d) List and explain goals and objectives of SQA.
- (e) Explain the role of testing in each phase of SDLC.
- (f) Explain in Details McCall's Quality factor.

Q. 2 Attempt ANY FOUR from the following:

(20M)

- (a) Explain the different testing principles.
- (b) Explain testing documentation in detail.
- (c) What is White Box testing and its types? Explain branch coverage testing.
- (d) Difference between Regression and smoke testing
- (e) Explain metric lifecycle.
- (f) What is Black Box testing and its types? Explain Boundary Value Analysis and Equivalence Partitioning

Q. 3 Attempt ANY FOUR from the following:

(20M)

- (a) Explain the steps of the defect management process.
- (b) Explain how statistical techniques are used in Software Quality Assurance.
- (c) What are the key principles of ISO 9000, and how do they contribute to software quality?
- (d) How can Run Charts be used during a software release cycle to ensure software quality?
- (e) Discuss the role of software reliability metrics, such as Mean Time Between Failures (MTBF) and Failure Rate.
- (f) Compare and contrast Formal Technical Reviews with informal reviews.

Q. 4 Attempt ANY FIVE from the following:

(15M)

- (a) State the objective of testing.
- (b) What are the different types of experienced based testing?
- (c) What is the format of the defect report?
- (d) Discuss about Quality Process Control.
- (e) Write a short note on testing strategy.
- (f) Describe a scenario where a Scatter Diagram was useful in improving software performance.
