

Q. P. Code: 21099

(3 Hours)

[Total Marks: 100]

- 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 two of the following:

- Compare Black Box, White Box and Grey Box Testing.
- Explain the issues in Object Oriented Testing.
- What is cyclomatic complexity? Explain with an example.
- State and explain the Levels of Testing.

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2. Attempt any three of the following:

- What is quality? Explain any four components of quality.
- State and explain different quality factors.
- Explain TQN in cost perspective.
- State the methods or techniques of Verification. Explain any two.
- Compare between continuous and continual Improvement in testing.
- Explain validation workbench.

3. Attempt any three of the following:

- What is equivalence partitioning? Explain the types of Equivalence Class Testing.
- Write a note on State Transition Based Testing.
- Explain DD-Path with an example.
- What are the advantages of functional testing?
- What is retrospection? Explain with reference to functional testing.
- A rectangle program accepts four integers as lengths for four sides of length from 1 to 100, inclusively. The output of the program is to determine whether the inputted numbers can form a rectangle, square or neither of these.
 - Create a decision table for the above problem with any five rules.
 Provide a test case for each given rule.

15

4. Attempt any three of the following:

- What is data flow testing? Explain with an example.
- What is Program graph? Explain the terminologies used to construct program graph.
- What is path testing? Explain with an example.
- Write a note on Du Path Test Coverage Metrics.
- Write a note on Metric Based Testing.
- What are the advantages and disadvantages of Structural Testing?

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[Turn Over]

5. Attempt **any three** of the following:

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- a. What is integration Testing? Give its advantages.
- b. Write a note on acceptance testing
- c. Explain the advantages and disadvantages of Bottom Up Approach.
- d. Explain the significance of Integration Testing.
- e. Enumerate the objectives and benefits of Unit Testing.
- f. Explain Acceptance Testing in detail.

6. Attempt **any three** of the following:

15

- a. What is UML? Discuss UML Support for Object Oriented Integration Testing.
- b. What is the significance of performance testing? With reference to Object Oriented System Testing.
- c. Write a note on Object Oriented Integration Testing.
- d. How is Object Oriented Software Testing different from Conventional Testing?
- e. What is Class Testing? Discuss the issues related to class testing.
- f. Explain the various levels of Object Oriented Testing.

7. Attempt **any three** of the following:

15

- a. What is the need for Test Process Improvement?
- b. State the advantages and disadvantages of qualitative analysis.
- c. Explain the guidelines for developing a test plan.
- d. What is test Metrics? Discuss any 5 types of Test Metrics.
- e. State the important guidelines for developing a Test Plan.
- f. Define the term 'Efforts' and explain the different types of Efforts.