



# P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Fifth Semester, Master of Computer Applications (MCA)**

**Semester End Examination; Dec.- 2019**

**Software Testing and Practice**

*Time: 3 hrs*

*Max. Marks: 100*

*Note: Answer FIVE full questions, selecting ONE full question from each unit.*

## UNIT - I

- |      |   |    |
|------|---|----|
| 1 a. | Discuss with a supporting flow graph the concept of errors, faults and failure in the process of programming and testing. | 10 |
|      | b. What is defect management? Explain different activities of defect management.  | 10 |
| 2 a. | How do you measure software quality? Explain in detail.   | 7  |
|      | b. Write a sample test plan and test case for sort program.   | 6  |
|      | c. Discuss the types of metrics used in software testing and their relationship.  | 7  |

## UNIT - II

- |      |  |    |
|------|--|----|
| 3 a. | Illustrate functional and structural testing with their representations.                                     | 10 |
|      | b. What is meant by test case? Mention the structure of test case description.                               | 10 |
| 4 a. | Explain decision table testing. List out refined decision table and test case for triangle problem.          | 10 |
|      | b. List out the different forms of equivalence class testing and explain each of them with suitable diagram. | 10 |

## UNIT - III

- |      |  |    |
|------|--|----|
| 5 a. | Explain each of the alternative life cycle models of water fall model along with diagram.              | 10 |
|      | b. Define slice based testing. What are USE relationship?  | 10 |
| 6 a. | Describe the McCabe's basis path method with suitable example.   | 10 |
|      | b. What is meant by DD-paths? Draw the program graph for a triangle problem and list out the DD-paths. | 10 |

## UNIT - IV

- |      |  |    |
|------|--|----|
| 7 a. | What is fault based testing? What are the assumptions made while performing fault based testing? | 10 |
|      | b. Explain scaffolding and test oracles with respect to test execution.                          | 10 |
| 8 a. | Discuss principles that characterize various approaches and techniques for analysis and testing. | 10 |
|      | b. Explain variations on mutation analysis.  | 10 |

Contd...2

UNIT - V

- 9 a. Explain clean room with neat diagram. 10
- b. Discuss the following terms:
  - i) Test case
  - ii) Test case specification 10
  - iii) Test obligation
  - iv) Test suit
- 10 a. Describe Software Reliability Engineering Test [SRET] approach. 7
- b. Briefly explain extreme programming methodology with diagram. 7
- c. Explain test design specification documents. 6

\* \* \*