



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

(An Autonomous Institution affiliated to VTU, Belagavi)

**Fifth Semester, B.E. - Information Science and Engineering**

**Semester End Examination; February / March - 2022**

**Software Testing**

Time: 3 hrs

Max. Marks: 100

### Course Outcomes

The Students will be able to:

CO1: Identify Test cases, Error and fault taxonomies, Levels of testing.

CO2: Classify different types of testing (Boundary Value Testing, Equivalence Class Testing and Decision Table-Based Testing).

CO3: Recognize Alternative life - cycle models, recognize Basic concepts for requirements specification, assess context of interaction.

CO4: Recognize approaches for Test Execution: from test case specifications to test cases, Scaffolding, Generic versus specific scaffolding.

CO5: Identify and plan strategies to test design specifications document.

**Note: I) PART - A** is compulsory. **Two** marks for each question.

**II) PART - B:** Answer any **Two** sub questions (from a, b, c) for Maximum of **18 marks** from each unit.

| Q. No.               | Questions  | Marks     | BLs | COs | POs |
|----------------------|--|-----------|-----|-----|-----|
| <b>I : PART - A</b>  |  | <b>10</b> |     |     |     |
| I a.                 | What is software reliability?  | 2         | L2  | CO1 | PO1 |
| b.                   | Define the following:  | 2         | L2  | CO2 | PO1 |
|                      | i) Uni-dimensional      ii) Multi-dimensional partitioning   |           |     |     |     |
| c.                   | What is structural testing?  | 2         | L2  | CO3 | PO1 |
| d.                   | What is test obligation and test suit?   | 2         | L2  | CO4 | PO1 |
| e.                   | Define system testing.   | 2         |     |     |     |
| <b>II : PART - B</b> |  | <b>90</b> |     |     |     |
| <b>UNIT - I</b>      |  | <b>18</b> |     |     |     |
| 1 a.                 | What is test automation? Discuss briefly the quality attributes followed in accessing high quality software. | 9         | L2  | CO1 | PO2 |
| b.                   | Illustrate with suitable examples, how software and hardware testing is done?                                | 9         | L2  | CO1 | PO2 |
| c.                   | Discuss the various types of software testing along with suitable examples.                                  | 9         | L2  | CO1 | PO2 |
| <b>UNIT - II</b>     |  | <b>18</b> |     |     |     |
| 2 a.                 | Explain the systematic procedure followed for equivalence partitioning.                                      | 9         | L2  | CO2 | PO1 |
| b.                   | What is boundary value analysis? Illustrate how BVA is used for test selection with example.                 | 9         | L2  | CO2 | PO2 |
| c.                   | Define cause-effect graph. Explain the procedure followed in creating decision table from CEG.               | 9         | L2  | CO2 | PO1 |

**UNIT - III****18**

- |      |  |   |            |
|------|--|---|------------|
| 3 a. | Explain with an example, how inter procedural analysis is done?    | 9 | L2 CO3 PO2 |
| b.   | Illustrate the path testing with suitable examples.                | 9 | L2 CO3 PO2 |
| c.   | Define definition-use pair. Discuss briefly the data flow testing. | 9 | L2 CO3 PO1 |

**UNIT - IV****18**

- |      |  |   |            |
|------|--|---|------------|
| 4 a. | Write a short note on adequacy criterion.  | 9 | L1 CO4 PO1 |
| b.   | Illustrate scaffolding with an example. Distinguish between generic versus specific scaffolding. | 9 | L3 CO4 PO2 |
| c.   | Define test oracle. Explain the test oracles concept with examples.                              | 9 | L1 CO4 PO1 |

**UNIT - V****18**

- |      |   |   |            |
|------|---|---|------------|
| 5 a. | Discuss briefly the various dependability properties followed in testing. | 9 | L1 CO5 PO1 |
| b.   | Explain the important types of integration testing strategies.            | 9 | L2 CO5 PO2 |
| c.   | Write a short note on the following:                                      |   |            |
|      | i) Regression testing   | 9 | L1 CO5 PO1 |
|      | ii) Acceptance testing  |   |            |
|      | iii) Risk management  |   |            |

\* \* \* \*