(T) Roll No. .....

PAPER ID—11445

B. Tech. EXAMINATION, 2025

(Sixth Semester)

COMPUTER SCIENCE AND ENGINEERING

Software Testing

Professional Elective Course-II

Time : 3 *Hours* *Maximum Marks :* 70

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. (a) Define software quality in the context of software testing. 2

(b) What is the Software Development Life-Cycle (SDLC) ? 2

(c) List two purposes of system testing. 2

(d) How is system testing different from unit testing ? 2

(e) What is the purpose of bug analysis ?2

(f) List two differences between black box and white box testing. 2

(g) Define white box testing with an example. 2

Unit I

2. (a) Explain the different phases of the Software Development Life-Cycle (SDLC). Give examples. 7

(b) Differentiate between an error, fault and failure with real-world examples. 7

3. Explain the Software Testing Life-Cycle (STLC) and its various phases in detail. 14

Unit II

4. (a) Explain the concept of test case and test suite with examples. 7

(b) Compare and contrast Unit Testing and Integration Testing. 7

5. (a) Draw and explain a standard format of a test case with an example. 7

(b) Discuss the different levels of software testing : Unit, Integration and System testing. 7

Unit III

6. (a) What is the difference between bug detection and bug analysis ? How does each contribute to software quality ? 7

   (b) Explain black box, white box and gray box testing with examples and key differences. 7

7. (a) What is the difference between bug detection and bug analysis ? How does each contribute to software quality ? 7

   (b) How does tester knowledge affect the effectiveness of black box, white box and gray box testing ? Discuss. 7

Unit IV

8. Why is making a bug reproducible important ? Discuss the steps and tactics used to ensure reproducibility. 14

9. How does gray box testing combine the benefits of black box and white box testing ? Explain with a scenario. 14

