Reg No.:_____ Name:_____



**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Sixth Semester B.Tech (Minor) Degree Examination June 2024 (2021 Admission)

**Course Code: CST382**

**Course Name: INTRODUCTION TO SOFTWARE TESTING**

Max. Marks: 100 Duration: 3 Hours

**PART A**

***Answer all questions, each carries 3 marks.*** Marks

| | | | |
|---|---|---|---|
| 1 | | What is meant by Software Testing? Why it is important? | (3) |
| 2 | | What is a test case? Give an example. | (3) |
| 3 | | Define the terms Mutation and Mutants. | (3) |
| 4 | | What is unit testing? List the steps involved in it? | (3) |
| 5 | | Explain the terms node coverage and edge coverage in graph coverage. | (3) |
| 6 | | Define a CFG? Draw the different symbols used in CFG. | (3) |
| 7 | | Explain the three steps in input domain modelling | (3) |
| 8 | | Define the following terms<br>a) All combinations coverage ii) Each choice coverage iii) T-wise coverage | (3) |
| 9 | | Discuss the advantages of grey box testing. | (3) |
| 10 | | Define pattern testing. | (3) |

**PART B**

***Answer one full question from each module, each carries 14 marks.***

**Module I**

| | | | |
|---|---|---|---|
| 11 | a) | Explain in detail, the different types of testing in a software development cycle. | (14) |

**OR**

| | | | |
|---|---|---|---|
| 12 | a) | Describe the characteristics of the five test process maturity levels | (10) |
| | b) | Develop four test cases to test an "Image Viewer" mobile application developed for android phones. The application is to view the images stored in the phone memory. | (4) |

**Module II**

| | | | |
|---|---|---|---|
| 13 | a) | Compare control flow testing and data flow testing. | (8) |
| | b) | JUnit as a framework for unit testing. Explain | (6) |

**OR**

14 a) Explain dynamic test unit environment with neat diagram (8)

b) Explain code review process in a static unit testing (6)

**Module III**

15 a) Explain the following terms with example (8)

i) call graph ii) parameter coupling

b) Explain the following terms with example (6)

i) coupling du pair ii) method and call coverage

**OR**

16 a) Draw the CFG for the following two code segments. (10)

```
if ( x < y )
{
  y = 0;
  x = x + 1;
}
```

```
x = 0;
while (x < y)
{
  y = f (x, y);
  x = x+1;
}
```

b) Compare static and dynamic data flow testing. (4)

**Module IV**

17 a) Explain interface based approach of input domain modelling (7)

b) Explain functionality based approach of input domain modelling (7)

**OR**

18 a) Explain the steps in developing test cases using the decision table technique. (10)

b) What are the conditions for the Decision table based testing to be effective? (4)

**Module V**

19 a) Grey box testing combines the advantages of both black box and white box testing. Justify your answer. (10)

b) Explain parameterized unit testing. (4)

**OR**

20 a) Explain matrix testing in detail (7)

b) Explain regression testing in detail (7)

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