

Code No: 156CW

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, February - 2023****SOFTWARE TESTING METHODOLOGIES****(Common to CSE, IT)****Time: 3 Hours****Max. Marks: 75**

- Note:** i) Question paper consists of Part A, Part B.  
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.  
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A****(25 Marks)**

- 1.a) Define path testing. [2]
- b) What is the difference between an error and a bug? [3]
- c) Write a short note on random testing. [2]
- d) What is the significance of data flow testing? [3]
- e) Write a short note on path expressions. [2]
- f) List out the different operators that are used to solve any boolean algebra. [3]
- g) Define a transition bug. [2]
- h) What is good state graph? [3]
- i) Define a connection matrix. [2]
- j) List the applications of graph matrices. [3]

**PART – B****(50 Marks)**

- 2.a) Differentiate between testing and debugging.
  - b) Describe the model for testing. [5+5]
- OR**
3. Classify the different types of bugs and explain. [10]
- 4.a) State and explain the transaction flow testing techniques.
  - b) Compare static slicing with dynamic slicing. [6+4]
- OR**
5. How developers and testers treat nice and ugly domains? Illustrate with the help of examples. [10]
- 6.a) Illustrate maximum path count arithmetic with an example.
  - b) Describe the usage of regular expression in flow anomaly detection. [6+4]
- OR**
- 7.a) Justify the use of decision table implementation for designing test cases.
  - b) Explain the procedure for specification validation using KV charts. [5+5]

8. Explain the following terms:  
a) Design guideline for building finite state machine  
b) Inessential finite state behavior. [5+5]
- OR**
- 9.a) Write short notes on testability tips.  
b) Summarize the concept transition testing. [5+5]
- 10.a) Describe node-term reduction optimization.  
b) Give a brief summary on relations. [5+5]
- OR**
11. Write an algorithm for node reduction using matrix operations and explain. [10]

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