

Code No: 156CW**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, March - 2024****SOFTWARE TESTING METHODOLOGIES****(Common to CSE, IT, ITE, CE(SE), CSE(DS), CSE(IOT))****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) What is debugging? Explain. [2]
- b) What are phases of testing? Explain. [3]
- c) Define Petri net model. [2]
- d) What is meant by domain testing and interface testing? [3]
- e) What are identity elements rules? [2]
- f) Define the motivation logic-based testing. [3]
- g) Define state-symbol product. [2]
- h) Explain about equivalent state graphs in detail. [3]
- i) Define partial ordering relations. [2]
- j) Write about matrix powers. [3]

PART – B**(50 Marks)**

- 2.a) Distinguish between link markers and link counters with examples.
 - b) What are coding bugs? Explain in detail. [5+5]
- OR**
- 3.a) Explain about a model for testing with a neat diagram.
 - b) What is the role of control flow graphs in path testing? Explain in detail. [5+5]
- 4.a) Explain about inspections, reviews, walkthroughs in transaction-flow testing.
 - b) Define data flow testing. Explain about data-flow anomaly state graph. [5+5]
- OR**
- 5.a) Briefly explain about transaction-flow testing techniques.
 - b) Discuss in detail about restrictions of domain testing. [5+5]
- 6.a) Explain about approximate minimum number of paths with suitable example.
 - b) Discuss about decision tables and structures with an example. [5+5]
- OR**
- 7.a) Describe maximum path count arithmetic with example.
 - b) Write and explain the rules of Boolean algebra. [5+5]

8. Explain about software implementation of state graph in detail. [10]

OR

9. Discuss about transition bugs in state graphs with suitable example. [10]

10. Explain the following:

a) Partitioning algorithm

b) Matrix representation software.

[5+5]

OR

11. Explain the following:

a) Node-reduction algorithm

b) Win Runner Tool.

[5+5]

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