

**Code No: 126VR****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, December - 2019****SOFTWARE TESTING METHODOLOGIES****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****(25 Marks)**

- 1.a) What is software testing and write its purpose. [2]
- b) Write the applications of path testing. [3]
- c) What is Data flow anomaly? [2]
- d) Compare data flow Vs Transaction flow. [3]
- e) What is loop free software? [2]
- f) Write about linear vector space. [3]
- g) Define cross and parallel term in path testing. [2]
- h) Write the limitations of path testing. [3]
- i) What is state transition? [2]
- j) Describe encoding bugs and give examples. [3]

**PART - B****(50 Marks)**

- 2.a) What is bug? Explain various kinds of bugs.
  - b) Explain in detail about path sensitization. [5+5]
- OR**
- 3.a) List the elements of flow graph and explain each element with suitable diagram.
  - b) What is path testing? Give a note on path selection and predicates. [5+5]
- 4.a) What is transaction flow testing? Explain with example.
  - b) What is transaction instrumentation in transaction flow? Explain with example. [5+5]
- OR**
- 5.a) What is program slicing? Explain Dynamic program slicing.
  - b) Explain different data object states in data flow graphs. [5+5]
- 6.a) Explain predicates of domain testing with examples.
  - b) Compare domain testing and interface testing. [5+5]
- OR**
- 7.a) Write about Nice and ugly domains and give examples to each domain.
  - b) Explain various bugs encountered at systematic and domain boundaries. [5+5]

- 8.a) Write the procedure to count minimum number of paths in a graph.  
b) Describe push/pop and get/return models in path testing. [5+5]
- OR**
- 9.a) Compare structured and unstructured flow graphs and illustrate with an example.  
b) What is KV-Chart? Draw KV-chart for 4 variables. [5+5]
- 10.a) Explain state testing in detail.  
b) Write the guidelines to design state machines. [5+5]
- OR**
- 11.a) Elaborate node reduction algorithm with an example.  
b) Explain good state graph with suitable example. [5+5]

---ooOoo---