

R20

Code No: 873AJ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**MCA III Semester Examinations, March/April - 2022****SOFTWARE TESTING METHODOLOGIES****Time: 3 Hours****Max.Marks:75**

Answer any five questions
All questions carry equal marks

- 1.a) Define testing. Explain the goal of software testing.
- b) What are the applications of path testing? Explain with examples. [7+8]
- 2.a) Explain the goal of path predicates, path sensitizing and path instrumentation.
- b) Differentiate testing and debugging with an example. [8+7]
- 3.a) What are the different notations used in the transaction flow testing? Explain.
- b) Differentiate Data flow testing and Domain testing with an example. [8+7]
- 4.a) What are the data flow testing motivation, applications and advantages? Explain.
- b) Discuss about domain boundaries and compound predicates. [8+7]
- 5.a) How Loop removal operation works and how loops are eliminated from the graph? Explain with an example.
- b) Calculate the probability and maximum path count arithmetic for a routine with an example. [8+7]
- 6.a) Write a short note on regular expressions and flow anomaly detection.
- b) Minimize the following function using KV map:
$$F(A, B, C, D) = \Sigma (1, 3, 4, 6, 8, 9, 11, 13, 15) + d(2, 14)$$
 [8+7]
7. Write a short note on following:
 - a) Dead state
 - b) Unreachable state
 - c) Transition bugs. [5+5+5]
- 8.a) Explain node reduction algorithm.
- b) Explain matrix of graph, relations and properties of relations. [7+8]

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