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## Third Semester MCA Degree Examination, July/August 2021 Software Testing

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions.**

- 1
  - a. Briefly Explain Error, Fault and Failure with a neat diagram. (06 Marks)
  - b. What is software quality? Explain in details. (07 Marks)
  - c. Explain the testing life cycle with neat diagram. (07 Marks)
  
- 2
  - a. Briefly explain the six basic principles of software testing. (08 Marks)
  - b. Differentiate between:
    - i) Verification and Validation
    - ii) Software and Hardware Testing
    - iii) Static and Dynamic metrics
    - iv) Static and Dynamic Testing. (12 Marks)
  
- 3
  - a. Write algorithm to generate a minimal BRO-constraint set from an abstract syntax tree  
 $P_r = (a + b) \wedge (c - d)$  (10 Marks)
  - b. Describe about the SATM screens with the problem statement. (10 Marks)
  
- 4
  - a. Explain Boundary Value Analysis testing and generalizing boundary value analysis with appropriate diagrams. (10 Marks)
  - b. Define the decision table with an example and explain the test case for triangle problem with decision table. (10 Marks)
  
- 5
  - a. Write the program graph, DD-path, program for the triangle program. (10 Marks)
  - b. Explain about Equivalence class testing with an example of triangle program and write the test cases. (10 Marks)
  
- 6
  - a. List the level of testing and explain each of them with example. Write the context diagram of the SATM. (10 Marks)
  - b. Compare the integration and system testing. Explain the McCabe's basic path with your example. (10 Marks)
  
- 7
  - a. Define DD-path. Write a DD-path graph for triangle problem and table showing program graph nodes. DD-path name case of definition. (10 Marks)
  - b. Define definition, use testing, du-path, definition-clear path, write du-paths for stacks, locks barrels of commission program. (10 Marks)
  
- 8
  - a. Explain the slice-based testing. Write the slice for stocks, locks, barrels of commission program. (10 Marks)
  - b. Differentiate between the traditional view of testing levels and alternative life cycle models (10 Marks)
  
- 9
  - a. Write a note on monitoring the process and improving the process. (10 Marks)
  - b. Explain documenting analysis and report. (10 Marks)
  
- 10
  - a. Define Scaffolding. Briefly explain generic vs specific Scaffolding. (10 Marks)
  - b. Write a note on Test oracles. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

