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**Fourth Semester MCA Degree Examination, June/July 2017**  
**Software Testing & Practices**

Time: 3 hrs.

Max. Marks: 100

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

- 1
  - a. Briefly explain about functional testing and structural testing. (10 Marks)
  - b. Explain about quality attributes. (05 Marks)
  - c. Differentiate between testing and debugging. (05 Marks)
- 2
  - a. Generate the BOR – constraint set and construct an abstract syntax tree of predicate  $P_r = (a + b) < c \wedge !P \vee (r > s)$ . Write an algorithm to generate a minimal BOR-constraint set from an abstract syntax tree of a predicate  $P_r$ . (10 Marks)
  - b. Explain the six basic principles of software testing. (10 Marks)
- 3
  - a. Brief out the program behavior to draw the venn diagram. (10 Marks)
  - b. State and explain the data flow diagram for the triangle problem. (05 Marks)
  - c. Describe about SATM screens with the problem statements. (05 Marks)
- 4
  - a. Explain boundary value analysis and generalizing boundary value analysis. (10 Marks)
  - b. Write equivalence class test cases for triangle problem. (05 Marks)
  - c. Define the decision table with an example and explain. (05 Marks)
- 5
  - a. Define the DD-path and write the DD-path for triangle program. (10 Marks)
  - b. Write the program-graph for the triangle program. (05 Marks)
  - c. Explain the data flow testing and slice – based testing with example. (05 Marks)
- 6
  - a. Differentiate between the traditional view of testing levels and alternative life cycle models. (10 Marks)
  - b. Explain about levels of testing. (10 Marks)
- 7
  - a. Explain about mutation analysis and fault based adequacy criteria. (10 Marks)
  - b. Brief about test oracles, self check as oracle. (05 Marks)
  - c. Describe about capture and replay. (05 Marks)
- 8
  - a. Justify with an example why document analysis is required. (10 Marks)
  - b. Briefly describe the test analysis document, design specification and report. (10 Marks)

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