USN | | | | | | | | | | **16MCA43**

Fourth Semester MCA Degree Examination, Dec.2018/Jan.2019
Software Testing and Practices

Time: 3 hrs.   Max. Marks: 80

Note: *Answer any FIVE full questions, choosing one full question from each module.*

Module-1

1 a. How do you measure software quality? Discuss correctness versus reliability pertaining to programs. **(08 Marks)**
   b. Discuss various types of metrics used in software testing and their relationship. **(08 Marks)**

OR

2 a. Generate the BOR–CSET and construct an abstract syntax tree of predicate $P_r = (a + b) < C \wedge !P \vee (r > s)$.
   Write the algorithm to generate a minimal BOR-CSET from an abstract syntax tree of a predicate P_r. **(10 Marks)**
   b. Explain the six basic principle of software testing. **(06 Marks)**

Module-2

3 a. Brief out the program behavior to draw the Venn diagram. **(10 Marks)**
   b. Describe about SATM screens with the problem statements. **(06 Marks)**

OR

4 a. Explain a typical testing life cycle with illustrations. **(08 Marks)**
   b. State and explain the data flow diagram for the triangle problem. **(08 Marks)**

Module-3

5 a. Explain boundary value analysis and generalizing boundary value analysis. **(10 Marks)**
   b. Write equivalence class test cases for triangle problem. **(06 Marks)**

OR

6 a. Discuss different forms of equivalence class testing with suitable graphical representation. **(10 Marks)**
   b. Write the guidelines for equivalence class testing. **(06 Marks)**

Module-4

7 a. What is DD-Path? Explain briefly. **(08 Marks)**
   b. Explain slice-based testing with an example. **(08 Marks)**

OR

8 a. Write the guidelines for data flow testing. **(10 Marks)**
   b. Write the program-graph for the triangle program. **(06 Marks)**

Module-5

9 a. Explain mutation analysis and fault based adequacy criteria. **(10 Marks)**
   b. Brief about test oracles, self check as oracles. **(06 Marks)**

OR

10 a. What is scaffolding and what is the purpose of it? Differentiate between generic and specific scaffolding. **(08 Marks)**
    b. Write a note on analysis and test plan. **(08 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.