USN | | | | | | | | | | **13MCA444**

Fourth Semester MCA Degree Examination, June/July 2016
Software Testing and Practices

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions.*

1   a. Explain testing and debugging with diagram.   **(10 Marks)**
    b. What is defect management? List the different activities.   **(04 Marks)**
    c. What is test metric? Explain in short different types of test metrics. **(06 Marks)**

2   a. Explain test generation strategies with diagram.   **(06 Marks)**
    b. What are the basic principles of test and analysis? Explain them in brief. **(10 Marks)**
    c. What is adequacy criteria and comparing criteria?   **(04 Marks)**

3   a. Define the term software testing. List out any four basic definitions associated with testing.
                                                                            (06 Marks)
    b. Describe testing life cycle with a suitable diagram.   **(04 Marks)**
    c. Explain briefly the two testing approaches used to identify test cases with an example.
                                                                            (10 Marks)

4   a. What is Boundary value analysis? Develop boundary value analysis test for the triangle
       problem of 3 variables a, b, c. Note that the variable ranges are $1 \leq a \leq 200$, $1 \leq b \leq 200$,
       $1 \leq c \leq 200$.   **(06 Marks)**
    b. What is equivalence class testing? What are the different forms of equivalence class testing?
       Explain each of them with suitable pictorial representation.   **(08 Marks)**
    c. Explain the decision table based testing. List out the decision table test cases for triangle
       problem.   **(06 Marks)**

5   a. What are DD paths? Draw the program graph for commission problem and list out DD
       paths.   **(10 Marks)**
    b. Describe the McCabe's basis path method with an example.   **(06 Marks)**
    c. Briefly explain Rapps-Weyker hierarchy of dataflow coverage metrics. **(04 Marks)**

6   a. What is traditional view of testing levels? And explain alternative life cycle models.
                                                                            (10 Marks)
    b. Explain Pairwise integration and neighbourhood integration. Give examples of each.
                                                                            (10 Marks)

7   a. What is mutation analysis? Explain fault based adequacy criteria.   **(08 Marks)**
    b. Explain scaffolding.   **(04 Marks)**
    c. Explain test oracles and self checks as oracles with diagram.   **(08 Marks)**

8   a. Describe five major activities in planning and monitoring the process. **(10 Marks)**
    b. Write a short note on organizing documents.   **(05 Marks)**
    c. Explain in short different types of documents.   **(05 Marks)**

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