10CS842

Eighth Semester B.E. Degree Examination, July/August 2022
Software Testing

Time: 3 hrs.   Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

1 a. Define the following with a testing life cycle:
   (i) Error   (ii) Fault   (iii) Failure   (iv) Incident   (v) Test case   **(07 Marks)**
   b. Compare the functional testing and structural testing.   **(06 Marks)**
   c. Discuss the triangle problem and show the flowchart for the triangle program implementation.   **(07 Marks)**

2 a. Explain how boundary value analysis can be performed with an example. Identify its limitation.   **(07 Marks)**
   b. Identify the revised equivalence classes for NextDate function and generate the 36 strong normal equivalence test case.   **(06 Marks)**
   c. What is DT-testing? Generate the test case for the triangle problem using DT-based testing.   **(07 Marks)**

3 a. Develop the DD-path graph for the triangle problem.   **(08 Marks)**
   b. Explain briefly E.F. Miller structural Test Courage Metrics.   **(07 Marks)**
   c. Define the following for a program graph G(p) and a set of variable 'V' using example.
   (i)   Defining node of variable
   (ii)   Usage node variable
   (iii) Predicate use node variable
   (iv)   Definition use path with respect to variable
   (v)   Definition clear path with respect to variable.   **(05 Marks)**

4 a. Explain about specification based life cycle models.   **(06 Marks)**
   b. Draw Context diagram, Entity Relationship Model, decomposition tree for SATM System.   **(06 Marks)**
   c. Explain Top-down and Bottom-up integration testing with necessary diagram.   **(08 Marks)**

PART – B

5 a. Discuss in brief the basic concepts for requirement specification with E/R model of Basic concept and modeling relationships basic constructs.   **(10 Marks)**
   b. Explain different types of static and dynamic interactions.   **(06 Marks)**
   c. Write a short note on client/server testing.   **(04 Marks)**

6 a. With a neat diagram, differentiate between validation and verification in testing.   **(07 Marks)**
   b. Explain the following analysis and testing principle:
   (i) Sensitivity   (ii) Redundancy   (iii) Restriction   (iv) Visibility   **(08 Marks)**
   c. Discuss briefly the dependability properties.   **(05 Marks)**

7 a. Explain assumptions in Fault-Based Testing.   **(06 Marks)**
   b. Define scaffolding. Discuss Generic versus specific scaffolding briefly.   **(07 Marks)**
   c. What is test oracles? Explain briefly the different types of oracles with relevant diagram.   **(07 Marks)**

8   Write short notes on the following:
   a. Quality and processes   b. Risk planning
   c. Test and analysis strategies and plan   d. Quality goal   **(20 Marks)**

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