Question Bank

Module-1

1. What is software testing? Differentiate between functional testing and structural testing.
2. Define Software quality. Discuss the two-quality metrics in detail.
3. Discuss the steps of test debug cycle with proper diagram.
4. Discuss the steps of STLC in detail with proper diagram.
5. Illustrate the case study of SATM with all the test cases.
6. Differentiate between testing and debugging.
7. What is a test case? Explain it with respect to a Venn diagram.
8. Define the following terms:
    - Test Oracle
    - Test Hardness
    - Incident
    - Bug
    - Failure
    - Usability r
    - Reliability
    - Correctness.
9. Discuss all the levels of testing with respect to waterfall model.
10. Briefly discuss the process of static testing.
11. What is test metric explain different text test metric in detail.
12. Discuss the triangle problem commission problem and next rate problem in detail.
13. Write the pseudo code for triangle problem.

Module-2

1. Discuss different methods for generating test cases.
2. Explain different functional testing methods for test case generation.
3. Briefly explain boundary value analysis. Discuss its disadvantages.
4. Write Sort notes on robustness testing and worst-case testing.
5. Generate the test cases for triangle problem, commission problem and next rate problem using boundary value analysis.
6. Generate the test cases for triangle problem, commission problem and next rate problem using equivalence partitioning.
7. Briefly explain the Decision Table and its type.
8. Generate the testcases for NextDate problem using decision table. (Discuss all the 3 trys).
9. A program reads an integer number within the range [1,100] and determines whether it is a

prime number or not. Design test cases for this program using BVC, robust testing, and worst-case testing methods.

10. A program computes ab where a lies in the range [1,10] and b within [1,5]. Design test cases for this program using BVC, robust testing, and worst-case testing methods.
11. A program reads three numbers, A, B, and C, within the range [1, 50] and prints the largest number. Design test cases for this program using BVC, robust testing, and worst-case testing methods.
12. A program takes an angle as input within the range [0, 360] and determine in which quadrant the angle lies. Design test cases using equivalence class partitioning method.
13. Design the Test cases for Triangle problem using Decision Table.
14. Make a comparison between BVA, Equivalence Testing and Decision Table.
15. A university is admitting students in a professional course subject to the following conditions:
   (a) Marks in Java ≥ 70
   (b) Marks in C++ ≥ 60
   c) Marks in OOAD ≥ 60
   (d) Total in all three subjects ≥ 220 OR Total in Java and C++ ≥ 150
   If the aggregate mark of an eligible candidate is more than 240, he will be
   eligible for scholarship course, otherwise he will be eligible for normal course.
   The program reads the marks in the three subjects and generates the following
   outputs:
   (i) Not eligible
   (ii) Eligible for scholarship course
   (iii) Eligible for normal course
   Design test cases for this program using decision table testing.

Module-3
1. Define DD-path. Draw DD-graph for triangle problem.
2. Justify strongly connected graph is the number of linearly independent circuits in the graph using cyclomatic complexity metric.
3. Define predicate node, du-paths, and dc-paths. Give du-paths for stocks, locks, total locks, sales, and commission for commission sale problem.
4. Explain test coverage metrics and basic path testing, with an example.
5. Explain slice-based testing guide lines and observation in detail.
6. Explain the different structural test coverage metrics.
7. Write a program of the commission problem. Construct the program graph and define use nodes for variable in the above problem.
8. Give Definition for All-defs, All uses, All P-uses/some C-uses, All C-uses/ some P-Uses, All Du-paths. Write hierarchy of dataflow coverage Metrics.
9. What is cyclomatic complexity? Explain how to calculate cyclomatic complexity of a given program by considering the biggest of three number logic.
10. Explain slice –based testing.
11. Write a short note on define/use testing.
12. What is scaffolding? Explain briefly generic versus specific scaffolding.
13. Write a note on statement testing and Branch testing.
14. What is the use of dataflow testing? List and define various terms in define-use testing.
15. Discuss types of slicing with appropriate example.

Module-4

1. With a neat diagram, explain the traditional view of testing levels of waterfall-life cycle.
2. Explain the rapid prototyping model with a neat diagram. Identify different methods to perform system testing using this model.
3. With an example, explain the top-down integration and bottom-up integration.
4. Explain the decomposition-based integration and it's types with example and diagram.
5. With a neat diagram explain the software development life cycle with a build sequence.
6. Explain traditional view of testing levels, alternative life-cycle models.
7. Explain in details, path-based and call graph-based integration with an example.
8. Explain the simple ATM application with the help of, (i) level 1 data flow diagram.
9. (ii) Upper-level finite state machine.
10. Distinguish between top - down integration and bottom - up integration.
11. Explain call graph-based integration with the help of, (i) pair-wise integration (ii) neighborhood integration
12. Explain the context diagram of SATM system.
13. Explain data flow diagram, Upper-level finite state machine and ER diagram with respect to the simple ATM application.
14. Define MM-path and MM-path graph with an example.
15. Draw the functional decomposition tree of SATM system and explain the pros and cons of decomposition-based integration.

Module-5

1. What is system testing? Explain with respect to user requirement.
2. What is Thread testing?
3. Discuss the 5 basic constructs of requirement specification with respect to tester's view to find threads and discuss the relationship among them.
4. What is ASF and ASF testing? Explain with some examples.
5. Discuss various types of threads in SATM system with diagram.
6. Explain the Pin-Entry, Pin-Try and Transaction Choice finite state machine of SATM system.
7. Define interaction testing.
8. Discuss about the sixth basic construct of the requirement specification.
9. Explain the square of opposition with example.
10. Discuss the 6 ground rules of threads and processor.
11. Explain 4 different types of interactions with example.
12. What is EDPN? Explain the following term with respect to EDPN.
    - 0-connected
    - 1-connected
    - 2-connected
    - 3-connected
13. Discuss the concept of determinism and nondeterminism with proper example.
14. Briefly discuss the process of Client – Server Testing with diagram.