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B.E./ B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV / DEC 2013
Common to Computer Science and Engineering & Information Technology

Seventh Semester

24

IT 471 / IT 9401 - Software Testing

(Regulation 2004 / 2008)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Which phase consumes maximum effort to fix an error? Why?
2. Why do you call acceptance test by its name?
3. What is the relationship of cyclomatic complexity to number of test cases?
4. What is the role of risk matrix for reduction of test cases?
5. Is unit testing possible or even desirable in all circumstances? Justify.
6. How is a class tested?
7. What is state based testing?
8. Distinguish: Inspection and Walkthrough
9. State the test adequacy criteria for web testing.
10. Distinguish: Measure and Metric

PART-B (5 x 16 = 80)

11. (i) Discuss the origins of defect classes. (8)
(ii) Draw and explain the software test life cycle. (8)
12. (a) Write a program to input two numbers and print them in (i) ascending order if the first is less than the second (ii) descending order, otherwise. Find all du-paths and identify those du-paths that are definition clear. Also find all du-paths, all-uses and all-definitions and generate test cases for these paths. (16)

(or)

(b) Consider a program for determination of largest among two numbers. Its input is a pair of positive integers (say x and y) and values are from interval [1,30].

(i) Design the boundary value test cases. (8)

(ii) Identify the test cases using equivalence class partitioning. (8)

13. (a) (i) Discuss the criteria used for test case selection and prioritization. (8)

(ii) Draw the state machine model for the 'ringing of a telephone'. What are the limitations of a basic state model? How are they overcome in a state chart? (8)

(or)

(b) (i) Where do you think both alpha and beta testing is necessary? Where there is no demand on conducting these tests? Why? (6)

(ii) How can we calculate cyclomatic complexity from an activity diagram? Explain with an example. (10)

14. (a) Discuss the components of software test plan.(16)

(or)

(b) Describe the lifecycle and procedures of software test management. (16)

15. (a) (i) Describe the following metrics: (16)

1. Quality of source code
2. Source code coverage
3. Test case defect density
4. Review efficiency
5. MTBF
6. MTTF
7. Failure intensity
8. Failures experienced in a time interval

(or)

(b) (i) What is the relationship between testability and complexity? Discuss the factors which affect the software testability. (10)

(ii) Write short notes on software test automation. (6)