Software Testing(End Term - Dec 2008)

Note : Attempt any five questions.

Q1.

a) Explain why complete testing is impossible with example. (4)

b) Define errors. Explain how errors can affect depending on when they are being detected? (4)

c) Differentiate between verification and validation. Describe various verification tools. (4)

Q2.

a) Differentiate between white box, glass box, and black box testing. (3)

b) Consider a program that determines previos date. Its inputs are triple of a day, month and year with its value in range : (5)

1<=month<=12
1<=day<=31
1900<=year<=2025

The possible output are previous date or invalid input. Design a boundary value test cases.

c) Compare robust testing and worst case testing. (2)

d) Explain equivalence class testing. (2)

Q3.

a) Explainhow decision table test cases can be derived for a program computing previous date as mentioned in Q2. (4)

b) Discuss Cause Effect graphing technique with an example. (4)

c)What is cyclomatic complexity? Explain with the helpof example. (4)

Q4.

a) Show with the help of an example that a very high level of statement coverage does not mean that a program is defect free. (4)

b) Write a program for finding roots of a quadratic equation. Draw the flow graph and DD path graph. Also find independent paths from DD path. (8)

Q5.

a) For program in Q4b), find all du paths and identify those du paths that are not dc paths.(6)

b) Define Mutation Testing.   (2)

c) How risk analysis is used in testing? How can we prioritize test cases using risk factor?(4)

Q6.

a) Define Regression testing. Is it necessary to perform? How various regression testing techniques differ from each other? Explain one regression testing technique.   (10)

b) What is Slice Based Testing? Give one example.   (2)

Q7.

a) Explain how system testing differs form integratioin testing.   (3)

b) Define different levels of testing.   (2)

c) What is Performance Testing?What are various testing performed under performance testing? Explain why each is necessary and how they are performed?   (7)

Q8. Write short notes on any 4 of the following:

a) Class Testing

b) Static Testing

c) Debugging

d) Dynamic Testing Tools

e) Object Oriented Testing

f) State Based Testing