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Sixth Semester B.E. Degree Examination, Dec.2013/Jan.2014
Software Testing

Time: 3 hrs.

Max. Marks:100

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

PART – A

1. a. What is software testing? Why it is so important in SDLC? (05 Marks)
- b. Explain the triangle problem statement along with flow chart for traditional implementation. (07 Marks)
- c. Explain the IEEE error and fault taxonomy and IEEE standard anomaly process. (08 Marks)
2. a. Justify the usage of boundary value analysis with function of two variables and highlight the limitations of boundary value analysis. (05 Marks)
- b. Explain weak normal and strong robust equivalence class testing with next date problem as an example. (05 Marks)
- c. Discuss the usage of decision table method to device test cases with example of commission problem and triangle problem. (10 Marks)
3. a. Define DD-path. Draw DD_g graph for triangle problem. (04 Marks)
- b. Justify strongly connected graph is the number of linearly independent circuits in the graph using cyclomatic complexity metric. (04 Marks)
- c. Define predicate node, du-paths and dc-paths. Give du-paths for stocks, locks, total locks, sales and commission for commission sale problem. (12 Marks)
4. a. Explain the simple ATM application with the help of, (i) Level 1 data flow diagram. (ii) Upper level finite state machine. (10 Marks)
- b. Distinguish between top-down integration and bottom-up integration. (04 Marks)
- c. Explain call graph-based integration with the help of, (i) Pair-wise integration (ii) Neighborhood integration. (06 Marks)

PART – B

5. a. Define the below terms: (i) Threads (ii) MM-path (iii) Data (iv) Actions (v) Ports (10 Marks)
- b. Explain single-processor static interaction and single-processor dynamic interaction. (10 Marks)
6. a. Explain verification trade-off dimensions. (08 Marks)
- b. Briefly discuss the dependability properties in process framework. (08 Marks)
- c. Which organizational factors are needed in process framework. (04 Marks)
7. a. Define below terms with respect to fault based-testing: (i) Original program (ii) Program location. (iii) Alternate expression (iv) Alternate program. (08 Marks)
- b. Explain mutation analysis software fault based testing. (04 Marks)
- c. List the Fault-based adequacy criterias. (03 Marks)
- d. Explain hardware fault-based testing. (05 Marks)
8. Write a short note on:
 - a. Quality and process.
 - b. Test planning.
 - c. Risk planning.
 - d. Organizing documents.
 - e. Test design specification document. (20 Marks)

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