Code No: R05320506 **Set No. 1**

III B.Tech II Semester Regular Examinations, Apr/May 2008
SOFTWARE TESTING METHODOLOGIES
(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. What is meant by a software bug? Discuss in detail the consequences of bugs. [16]
2. What is meant by statement coverage (C1) and branch coverage (C2)? Explain with an example, how to select enough paths to achieve C1+C2. [16]
3. (a) What are the transaction flows? Discuss their complications.
   (b) What is meant by Data-flow testing? Discuss its significance. [8+8]
4. (a) What is meant by a nice domain? Give an example for nice two-dimensional domains.
   (b) Discuss the following terms: [8+8]
      i. Linear domain boundarees
      ii. Non linear domain boundaries
      iii. Complete domain boundaries
      iv. Incomplete domain boundaries
5. (a) Explain about Lower path count arithmetic.
   (b) Explain about Maximum path count arithmetic. [8+8]
6. What is decision table and how is a decision table useful in testing? Also explain with the help of an example. [16]
7. Write the differences between logic based testing , state testing and path testing. [16]
8. (a) Write about equivalence relation and partial ordering relation.
   (b) Write relative merits and demerits of different Graph Matrix representations. [8+8]

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Code No: R05320506 **Set No. 2**

III B.Tech II Semester Regular Examinations, Apr/May 2008
SOFTWARE TESTING METHODOLOGIES
(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Why is it impossble for a tester to find all the bugs in a system? Why might it not be necessary for a program to be completely free of defects before it is delivered to its customers?
   (b) To what extent can testing be used to validate that the program is fit for its purpose? Discuss. [10+6]
2. What is meant by a Loop? State and explain various kinds of Loops with suitable examples. Also discuss how to select optimal paths for C1+C2.(Statement coverage + Branch coverage) [16]
3. (a) State and explain various transaction flow junctions and mergers.
   (b) Explain the terms Inspections, Reviews and Walkthroughs. [6+10]
4. Discuss in detail the nice domains and ugly domains with suitable examples. [16]
5. (a) Define path product, path expression and path sum. Explain with examples.
   (b) Explain applications of Paths, Path Products and Regular Expressions. [8+8]
6. (a) Explain about the don?t care conditions in the logic based testing.
   (b) Explain about the ambiguities and contradictions in the specifications. [16]
7. The behavior of a finite-state machine is invariant under all encodings. Justify. [16]
8. (a) What are the matrix operations in tool building?
   (b) Discuss the algorithm for finding set of all paths. [8+8]

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Code No: R05320506 **Set No. 3**

III B.Tech II Semester Regular Examinations, Apr/May 2008
SOFTWARE TESTING METHODOLOGIES
(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Why is it impossble for a tester to find all the bugs in a system? Why might it not be necessary for a program to be completely free of defects before it is delivered to its customers?
   (b) To what extent can testing be used to validate that the program is fit for its purpose? Discuss. [10+6]
2. What is meant by statement coverage (C1) and branch coverage (C2)? Explain with an example, how to select enough paths to achieve C1+C2. [16]
3. (a) Discuss the three possible interpretations of the decision symbol with two or more outlinks.
   (b) What is meant by transaction flow structure? Discuss the reasons why the transaction flows are often structured? [6+10]
4. (a) What is meant by a nice domain? Give an example for nice two-dimensional domains.
   (b) Discuss the following terms: [8+8]
      i. Linear domain boundarees
      ii. Non linear domain boundaries
      iii. Complete domain boundaries
      iv. Incomplete domain boundaries
5. Using reduction procedure convert flow graph whose links are labeled into a path expression. Explain each step with flow graph as shown in figure 5. [16]

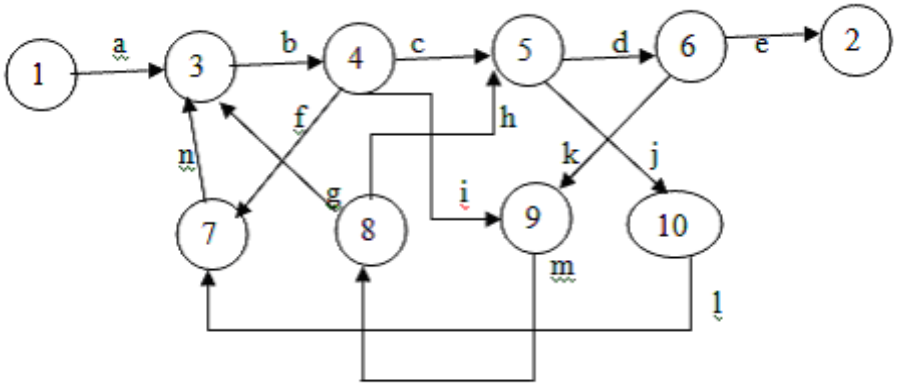

Figure 5

6. (a) Describe the procedure for specification validation using KV charts.
   (b) How can we check the consistency and completeness in the decision tables. [8+8]

7. (a) What are the principles of state testing? Explain its advantages and disadvantages.
   (b) What is finite state machine and a state? [8+8]

8. (a) What are the advantages of array representations?
   (b) Write about loops in matrix representation. [8+8]

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Code No: R05320506 **Set No. 4**

III B.Tech II Semester Regular Examinations, Apr/May 2008
SOFTWARE TESTING METHODOLOGIES
(Common to Computer Science & Engineering and Information Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Discuss how software testing will ensure the quality of a developed software.
   (b) Discuss the trade - off between quality assurance costs and manufaturing costs. [10+6]
2. (a) Discuss about assignment blindness, and equality blindnesss of predicates.
   (b) Explain the terms achievable and unachievable paths. [10+6]
3. (a) Discuss the following strategies of data flow testing with suitable examples:
      i. All-predicate-uses(APU) strategy
      ii. All-computational (ACU) strategy
   (b) Compare the path flow and data-flow testing strategies. [8+8]
4. (a) What is meant by a nice domain? Give an example for nice two-dimensional domains.
   (b) Discuss the following terms: [8+8]
      i. Linear domain boundarees
      ii. Non linear domain boundaries
      iii. Complete domain boundaries
      iv. Incomplete domain boundaries
5. Write about Huang's Theorem. Explain its implementation with an example. Explain its Generalizations and limitations. [16]
6. (a) Describe the procedure for specification validation using KV charts.
   (b) How can we check the consistency and completeness in the decision tables. [8+8]
7. (a) Write the design guide lines for building the finite state machine into code.
   (b) Explain all the rules in the conversion of specification into a state graph.[8+8]
8. (a) What are the advantages of array representations?
   (b) Write about loops in matrix representation. [8+8]

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