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

III B.Tech II Semester Supplimentary Examinations, Aug/Sep 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. (a) Discuss about "Traversal marker" form of path instrumentation.
   (b) What is meant by coincidental correctness? Give an example. [8+8]
3. (a) What is meant by a program slice? Discuss about static and dynamic program slicing.
   (b) Explain the terms Dicing, Data-flow, and Debugging. [8+8]
4. (a) What is meant by domain testing? Discuss various applications of domain testing.
   (b) With a neat diagram, explain the schematic representation of domain testing. [10+6]
5. Write short notes on:
   (a) Distributive laws
   (b) Absorption Rule
   (c) Loops
   (d) Identity Elements. [4+4+4+4]
6. (a) How can we form the specifications into the sentences? Write down the different phrases which can be used for the words.
   (b) Explain about the ambiguities and contradictions in the specifications. [8+8]
7. (a) What are the software implementation issues in state testing?
   (b) Explain about good state and bad state graphs. [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. 2**

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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. (a) What is meant by statement testing and branch testing? Give suitable examples.
   (b) State and explain various path selection rules for path testing. [8+8]
3. (a) What is meant by data-flow model? Discuss various components of it.
   (b) Explain the All-c-uses/ some-p-uses (ACU+P) strategy in data-flow testing with a suitable example. [8+8]
4. (a) Explain clearly how one dimensional domains are tested. [10+6]
   (b) Discuss about equality and inequality predicates. Also explain how they are treated in domain testing.
5. (a) Discuss path sum and path product.
   (b) Discuss in brief the applications of paths. [8+8]
6. (a) Minimize the function using Karnaugh Map method:
   F(A,B,C,D)= P(1,2,3,8,9,10,11,14)+ Pd(7,15)
   (b) Demonstrate by means of truth tables the validity of the following theorems of Boolean algebra:
      i. Associative laws
      ii. Demorgans theorems for three variables
      iii. Distributive law of + over [8+8]
7. Write short notes on:
   (a) Transition bugs
   (b) Dead states
   (c) State bugs
   (d) Encoding bugs [4+4+4+4]

8. What are graph matrices and their applications? [16]

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

III B.Tech II Semester Supplimentary Examinations, Aug/Sep 2008
SOFTWARE TESTING METHODOLOGIES
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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. (a) What is meant by program's control flow? How it is useful for path testing?
   (b) Discuss various flow graph elements with their notations. [8+8]
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 domain testing? Discuss various applications of domain testing.
   (b) With a neat diagram, explain the schematic representation of domain testing. [10+6]
5. (a) Flow graph are abstract representation of programs. Justify?
      i. Distributive laws
      ii. Absorption Rule. [8+8]
6. (a) Explain prime implicant, sum-of-product form and product-of-sum form.
   (b) What are Decision Tables? [8+8]
7. (a) Write Testers comments about state graphs.
   (b) What are the types of bugs that can cause state graphs? [8+8]
8. (a) Write a Partitioning Algorithm.
   (b) Write an algorithm for Node Reduction. [8+8]

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

III B.Tech II Semester Supplimentary Examinations, Aug/Sep 2008
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Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Discuss clearly about requirements, features, and functionality of bugs.
   (b) What are the control and sequence bugs? How they can be caught? [10+6]

2. Consider the following flow graph Figure 2

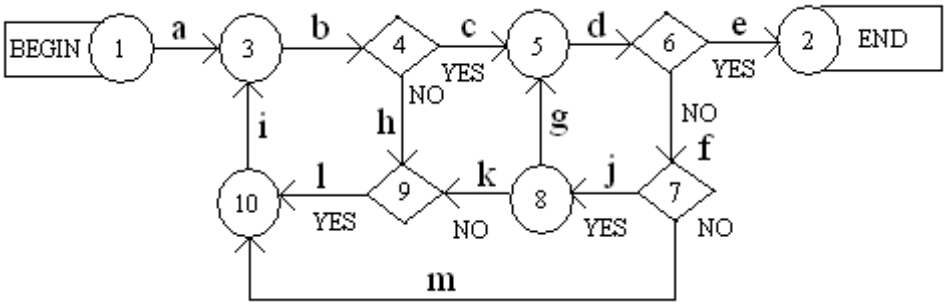

Figure 2
Select optimal number of paths to achieve C1+C2 (statement coverage + branch coverage). [16]

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. Discuss in detail the Domains and Interface testing. [16]

5. (a) Explain Data-Flow Testing with an example.
   (b) Explain its Generalizations and limitations. [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. Explain with example how to convert a specification into a state graph. Also discuss how contradictions can come about? [16]

8. (a) What are the disadvantages of array representations?
   (b) Discuss the linked list representation?
   (c) What are the matrix operations in tool building? [3+5+8]

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