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<b>NEW SCHEME</b>
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**Eighth Semester B.E. Degree Examination, May 2007**  
**Information Science and Engineering**  
**Software Practice and Testing**

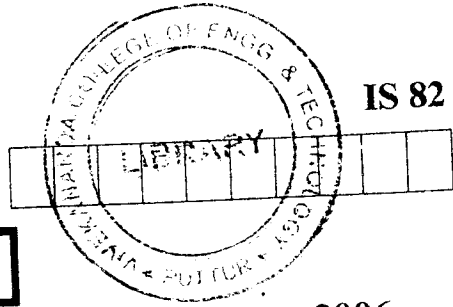
Time: 3 hrs.]

[Max. Marks:100

Note : Answer any FIVE full questions.

- 1 a. Explain the different guidelines used for framing variable and function names in a program. (10 Marks)  
b. Explain comma-separated values with examples. (10 Marks)
- 2 a. Explain growing array with examples. (10 Marks)  
b. Explain Markov chain algorithm with example. (10 Marks)
- 3 a. List all the suggestions for tuning the code and explain any four. (10 Marks)  
b. Explain the different guidelines used for the portability of a language. (10 Marks)
- 4 a. Explain any two programming tools used for structuring a special purpose language. (10 Marks)  
b. Explain "No clues, Hard bugs" method of debugging the program. (10 Marks)
- 5 a. Discuss any five essentials of the software testing process. (10 Marks)  
b. What is configuration management? Explain the different disciplines, which are used for administrative direction, control and surveillance for configuration management. (10 Marks)
- 6 a. Explain the different key elements and phases in :  
i) Inspection.  
ii) Walkthroughs.  
iii) Buddy checks. (10 Marks)  
b. What are the different critical factors and recommendations required for successful implementation of verification testing? Explain them. (10 Marks)
- 7 a. List all the axioms that apply to validation testing. (08 Marks)  
b. Explain the different validation testing tasks and deliverables. (12 Marks)
- 8 a. Explain the different approaches for organizing the test function. (10 Marks)  
b. Write an explanatory note on software measures and practices and benchmark study. (10 Marks)

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**NEW SCHEME**

**Eighth Semester B.E. Degree Examination, May / June 2006**  
**ISE**

**Software Practice & Testing**

[Max. Marks:100]

Time: 3 hrs.]

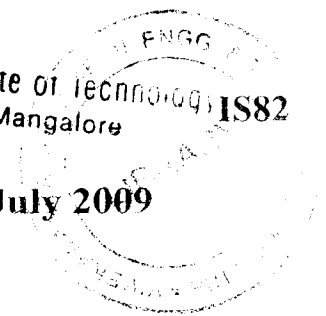
**Note: 1. Answer any FIVE full questions.**

- 1 a. Explain the following constructs with reference to the style of programming:
  - i. Consistency and idioms
  - ii. Names
  - iii. Function macros. (12 Marks)
- b. What is CSV? Illustrate the need and advantages of CSV with examples. (08 Marks)
- 2 a. Explain quicksort function for best possible cases. Analyse the same and compare with the worst case. (08 Marks)
- b. Explain the Markov chain algorithm with an appropriate example. (12 Marks)
- 3 a. List the programming tools with their advantages. (10 Marks)
- b. Explain the software debugging methods when there are no clues and hard bugs. (10 Marks)
- 4 a. What are the essentials of software testing? Explain. (10 Marks)
- b. Explain configuration management in testing. (10 Marks)
- 5 a. What is Verification? Explain the different phases in verifying documents. (10 Marks)
- b. Explain White-box testing. (10 Marks)
- 6 a. What are the different validation activities? Explain in detail High-level testing. (12 Marks)
- b. Describe the different phases of a software life-cycle in detail. (08 Marks)
- 7 a. What are the categories of testing tools? Explain. (10 Marks)
- b. How are measurements done for software professionals? Explain some useful measures. (10 Marks)
- 8 Write short notes on:
  - a. Good User Interface design.
  - b. Hash tables.
  - c. The SDT (Software Development Technology) dotted-U-model. (20 Marks)
  - d. IEEE/ANSI requirement specification.

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**Eighth Semester B.E. Degree Examination, June-July 2009**  
**Software Practice and Testing**

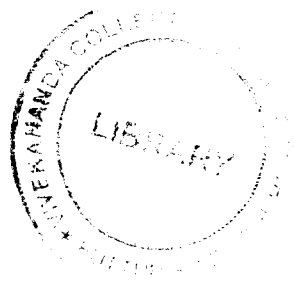
Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions.**

- 1 a. Explain the different guidelines used for writing the expressions and statements. (08 Marks)  
b. Explain the different guidelines used for writing the comment in a program. (08 Marks)  
c. Explain with example comma-separated values. (04 Marks)
- 2 a. Explain with example, the quick sort function for sorting an array of integers. (08 Marks)  
b. Explain how Hash Tables are used to create an efficient structure for storing and retrieving dynamic data. (08 Marks)  
c. Explain Markov chain algorithm. (04 Marks)
- 3 a. List and explain the different suggestions for tuning the code. (10 Marks)  
b. Explain the different parameters to be considered for selecting the programming language. (10 Marks)
- 4 a. Explain with example, the regular expressions. (10 Marks)  
b. List and explain the different steps involved in debugging the program by using "Good clues – Easy Bugs". (10 Marks)
- 5 a. List and explain the different essentials of software testing. (10 Marks)  
b. Explain the different attitudes of a good tester. (06 Marks)  
c. What are the basic forms of testing? (04 Marks)
- 6 a. Explain the key elements and phases involved in Inspection and walkthroughs. (10 Marks)  
b. Explain the Black-Box method for function-based tests. (06 Marks)  
c. List the properties of a good requirements specifications. (04 Marks)
- 7 a. What are components which are involved in minimizing the cost of performing tests? (06 Marks)  
b. Explain the verification testing tasks and deliverables. (10 Marks)  
c. What are the different tasks involved in test execution? (04 Marks)
- 8 a. Explain the different tools for reviews and inspections. (06 Marks)  
b. Explain the different tools used in test execution and evaluation. (08 Marks)  
c. Explain the different useful measures. (06 Marks)

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**Eighth Semester B.E. Degree Examination, May / June 08**  
**Software Practice and Testing**

Max. Marks:100

Time: 3 hrs.

**Note : Answer any FIVE full questions.**

- 1 a. Explain the different guidelines used for writing the expressions and statements. (10 Marks)  
b. Explain the different principles used for good interfaces. (10 Marks)
- 2 a. List all the important differences between arrays and lists. (06 Marks)  
b. Explain the Markov chain algorithm with examples. (08 Marks)  
c. Explain Hash -- Table with figure. (06 Marks)
- 3 a. List and explain all the strategies to be followed for Tuning the code. (10 Marks)  
b. Explain the following with examples : (10 Marks)  
i) Headers and Libraries ii) Program Organization.
- 4 a. Explain Interpreters, compilers and virtual machines with examples. (10 Marks)  
b. Explain "Good clues, Easy Bugs" method of debugging the program. (10 Marks)
- 5 a. Explain all the essentials of software testing. (06 Marks)  
b. List all the attitudes of a good tester. (04 Marks)  
c. Explain with example : (10 Marks)  
i) Formal documents ii) Test ware iii) Measurements iv) Tools.
- 6 a. What are the key elements and phases involved in : i) Inspection ii) Walkthrough. (08 Marks)  
b. Explain the Black -- box methods for function based tests. (06 Marks)  
c. What are the steps involved in minimizing the cost of performing tests. (06 Marks)
- 7 a. Explain the verification testing tasks and deliverables. (08 Marks)  
b. Explain the different tools used for testing the reviews and inspections. (08 Marks)  
c. Explain the different useful measures. (04 Marks)
- 8 a. Explain all the structural design elements. (08 Marks)  
b. Explain the different approaches to organizing the test function. (08 Marks)  
c. What are the key findings of software measures and practices bench mark study. (04 Marks)

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## Eighth Semester B.E. Degree Examination, May/June 2010

### Software Testing

Time: 3 hrs.

Max. Marks:100

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

#### PART – A

- 1 a. Define the following:
  - i) Error      ii) Fault      iii) Failure      iv) Bug. (04 Marks)
- b. Discuss the attributes associated with software quality. (08 Marks)
- c. What is a test metric? List the various test metrics associated with software testing. Explain any two. (08 Marks)
  
- 2 a. Explain the following:
  - i) Testability      ii) Verification (04 Marks)
- b. What is defect management? List the different activities. Explain any two. (08 Marks)
- c. Explain the following:
  - i) Static testing      ii) Model based testing and model checking. (08 Marks)
  
- 3 a. Explain the following:
  - i) Equivalence partitioning      ii) Boundary value analysis (04 Marks)
- b. Explain the steps associated in creating the equivalence classes for the given problem requirements. (08 Marks)
- c. Identify the steps in the generation of tests, using the category partition method. Explain any two. (08 Marks)
  
- 4 a. List the generic procedure which is used for generation of tests, using cause-effect graphing. (04 Marks)
- b. Explain the process of creating cause effect graph. (08 Marks)
- c. Explain the fault model for predicate testing. (08 Marks)

#### PART – B

- 5 a. Explain the branch testing, with an example. (04 Marks)
- b. Explain the following:
  - i) Procedure call testing      ii) Path testing (08 Marks)
- c. Explain in detail, condition testing and the infeasibility problem associated with it. (08 Marks)
  
- 6 a. What do you understand by definition use pairs? Draw the control graph of GCD method. (04 Marks)
- b. Explain the following:
  - i) Data flow analysis      ii) Classic analysis. (08 Marks)
- c. Explain in detail, the data flow testing criteria. (08 Marks)
  
- 7 a. Explain the following:
  - i) Test case      ii) Test case specification      iii) Test suite      iv) Adequacy criteria. (04 Marks)
- b. Explain in detail, the scaffolding and test oracles, with reference to test execution. (08 Marks)
- c. Discuss: i) Test case specification to test cases      ii) Capture and replay. (08 Marks)
  
- 8 Write short notes on:
  - a. Quality process
  - b. Integration testing
  - c. Regression testing
  - d. Acceptance testing (20 Marks)

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## Eighth Semester B.E. Degree Examination, May/June 2010

### Software Testing

Time: 3 hrs.

Max. Marks:100

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

#### PART – A

- 1
  - a. Explain different quality attributes of a software. (08 Marks)
  - b. Explain with a neat diagram, the testing and debugging cycle. (08 Marks)
  - c. Consider the following:  
Requirement 1 : It is required to write a program that inputs two integers and outputs the maximum of these.  
Comment on its completeness. (04 Marks)
  
- 2
  - a. Using a diagram, discuss the summary of test generation strategies. (08 Marks)
  - b. Consider the following Java method.
 

```
public static String collapseNewlines(String argstr)
{
    char last = argstr.charAt(0);
    StringBuffer argBuf = new StringBuffer();
    for (int cldx = 0; cldx < argstr.length(); cldx++)
    {
        char ch = argstr.charAt(cldx);
        if (ch != '\n' || last != '\n')
        {
            argBuf.append(ch);
            last = ch;
        }
    }
    return argBuf.toString();
}
```

Identify the basic blocks, their entry points and exit points. Draw the control flow graph. (08 Marks)
  - c. Explain the terms: walk through S and inspection of code. (04 Marks)
  
- 3
  - a. Illustrate the complexity of test selection problem, with an example. (04 Marks)
  - b. What is equivalence partitioning? How are the various types of variables partitioned? Give one example to each. (08 Marks)
  - c. Explain with an example the process of boundary value analysis. (08 Marks)
  
- 4
  - a. What is cause-effect graphing? Explain the generic procedure to generate lists from cause effect graphing. Show the basic elements of cause effect graphing. (10 Marks)
  - b. Define the following three predicate testing criteria:  $\forall$  BOR-, BRO-, BRE-. Write the procedure to generate BOR- constraint set. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. It will be treated as malpractice.  
2. Any revealing of identification, equal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

**PART – B**

- 5 a. What are the differences between functional and structural testing? (04 Marks)
- b. Show with an example, how statement adequacy criterion is not sufficient to identify faults in the code. (08 Marks)
- c. What is multiple condition/decision coverage criteria? Illustrate how this reduces the no. of test cases required to test a compound condition. (08 Marks)
- 6 a. Define the following giving examples:  
i) Definition of a variable                      ii) Use of a variable  
iii) Definition of clear path                      iv) Direct data dependency. (08 Marks)
- b. Illustrate the generation of spurious execution paths while data flow analysis through procedure calls. (08 Marks)
- c. Give an example when DU paths can be exponential and explain how. (04 Marks)
- 7 a. Explain the following terms:  
i) Test case      ii) Test case specification      iii) Test obligation      iv) Test suite  
v) Test or test execution vi) Adequacy criterion. (06 Marks)
- b. Write a note on Scaffolding (07 Marks)
- c. Explain with example:  
i) Test oracle  
ii) Comparison based oracle  
iii) Partial oracle. (07 Marks)
- 8 Write short notes on:  
a. System testing  
b. Acceptance testing  
c. Regression testing  
d. Clean room process model (20 Marks)

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