

Final Term Examination - August 2004
Time Allowed: 150 Minutes

Instructions

Please read the following instructions carefully before attempting any question:

1. The duration of this examination is 150 Mins.
2. You have to attempt all Questions.
3. This examination is closed book, closed neighbors; any one found cheating will get no grade.
4. Do not ask any questions about the contents of this examination from anyone.
 - a. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.
 - b. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.
5. You are allowed to use any tool that helps in drawing UML Diagrams like Microsoft Word, Visio etc.

Total Marks: 60

Total Questions: 6

Question No. 1

Marks : 10

Write a short note on Façade pattern.

Question No. 2

Marks : 9

Give brief answers to the following:

1. How does software differ from the artifacts produced by other engineering disciplines? (3 Pts)
2. What is meant by the term software reliability? (3 Pts)
3. Describe the principle of information hiding as it applies to software design. (3 Pts)

Question No. 3

Marks : 6

What are the symptoms of pointer errors?

Question No. 4

Marks : 15

Consider the following code:

```
if ((a >= b) && (a >= c)) max = a;  
if ((b >= a) && (b >= c)) max = b;  
if ((c >= a) && (c >= b)) max = c;
```

- (a) Draw the flow graph for this code segment. (5 Pts)
- (b) Calculate the cyclomatic complexity for this code (2 Pts)
- (c) Identify one infeasible path if any. (1 Pts)
- (d) Identify all feasible paths (2 Pts)
- (e) Write white-box test cases for all the feasible paths (5 Pts)

Question No. 5

Marks : 10

Write a short note on zero-install client-server configuration.

Question No. 6

Marks : 10

Following is the prototype of a function to find the index of the minimum value in an array.

```
int min(int array[ ], int arraySize);
```

- (a) Identify equivalence partitions to devise black-box test cases for this function. (5 Pts)
- (b) Write test cases against each partition identified in part (a). (5 Pts)