Department of Information Technology

NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR

MAJOR EXAMINATION

Course: Software Engineering | **Time: 2 hrs**

Semester: 4th | **Max. Marks: 50**

Date: 03/07/2016 | **Session: Spring**

Note : Attempt any 4 questions

Q1. (a) What do you mean by prototype of a software? Explain the Prototyping model? [6]

(b) What is the difference between SRS document and design document. [2.5]

(c) Explain the following Software Metrics

(i) Lines of code (ii) Function point [2×2]

Q2. (a) What do you mean by requirement engineering? Explain its activities in detail. [8]

(b) What is a risk? Is it economical to do risk management? [2.5]

(c) Explain Facilitated Application Specification Technique(FAST) ? [2]

Q3. (a) Assume that the size of an organic type software product has been estimated to be 32,000 lines of source code. Assume that the average salary of Software engineers be Rs. 15,000/- per month. Determine the effort required to develop the software product and the nominal development time and cost. [6]

Software Project	a_a	b_b	c_a	d_b
Organic	2.4	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

(b) What are the different classes of software design models? [2.5]

(c) What is project scheduling and what are the different activities involved in project scheduling? [4]

Q4:-(a) Discuss the various strategies of design. Which design strategy is most popular and practic

(b)Define module cohesion and explain different types of cohesion. Compare module cohesion with module coupling.

[5, 7.5

Q5:- (a) Define black box and white box testing. What are the advantages of each approach? Why are both necessary?

(b) Consider the program given below:

```
public double calculate(int amount)
{
        doublerushCharge = 0;
        if (nextday.equals("yes") )
        {
                rushCharge = 14.50;
        }
        double tax = amount * .0725;
        if (amount >= 1000)
        {
                shipcharge = amount * .06 + rushCharge;
        }
        else if (amount >= 200)
        {
                shipcharge = amount * .08 + rushCharge;
        }
        else if (amount >= 100)
        {
                shipcharge = 13.25 + rushCharge;
        }
                else if (amount >= 50)
        {
                shipcharge = 9.95 + rushCharge;
        }
                else if (amount >= 25)
        {
                shipcharge = 7.25 + rushCharge;
        }
        else
        {
                shipcharge = 5.25 + rushCharge;
        }
        total = amount + tax + shipcharge;
        return total;

}
```

i. Develop flow graph and DD path graph for this program.

ii. Calculate its *cyclomatic complexity*.