



*Department of Information Technology*  
**NATIONAL INSTITUTE OF TECHNOLOGY SRINAGAR**  
**MAJOR EXAMINATION**

Course: Software Engineering

Time: 3hrs

Semester: 4<sup>th</sup>

Max. Marks: 60

Date: 15/06/2019

Session: Spring

Note: Attempt any 4 questions

Q1.

- (a) Explain Software Management Configuration activities in detail?  
(b) Differentiate between validation and verification?

CO3  
(10)

Q2.

- (a) Using Euclid's GCD computing program, explain statement coverage strategy.  
(b) Briefly explain mutation testing.

(10)

Q3.

- (a) What are the different categories of software development projects according to COCOMO estimation model. Write down the formula to estimate effort and duration for each category.

(5)

- (b) For the software that computes the root mean square of an input integer that can assume values in the range of 0 and 5000. Determine equivalence classes and boundary value test suite.

(5)

Q4.

- (c) Draw the sequence diagram for renew book use case.

CO1  
(5)

(a) Define:

- i. Person-month
- ii. Stub
- iii. Driver
- iv. Scaffolding
- v. Stress testing

(1\*5=5)

- (b) Explain prototyping model in detail.

(5)

- (c) What problems are likely to arise if two modules have high coupling?

(5)

Q5.

- (a) With the help of example, differentiate between synchronous and asynchronous operations. (5)
- (b) Consider the RMS calculating software which reads 3 input integers in the range of -1000 to +1000. It calculates the root mean square (rms) of these input numbers and display the result. Draw the context level diagram and level 1 DFD. (5)
- (c) List the shortcomings of LOC for use as a software size metric for carrying out project estimations. (5)