

E&TC Dept

BTECH: Simulation Tools

## Books based Term Work- Jan-May 2019 Lab Session

**The solutions are to be submitted in the form of the laboratory Journal Term Work**

**Final Oral Exam will be based on this term work along with the Simulation Tools Laboratory experimentation on GPSS, ARENA, Monte Carlo Simulation with Coding practice for Random number generation with LCG and Mid-square methods.**

**Part 1: Book: Discrete-Event System Simulation** -Jerry Banks, John S. Carson II, Barry L. Nelson, David M. Nicol (Fifth Edition). Refer the accompanying book web site <http://www.bcn.net/>

Students have to read the Chapters 2 and 6 from the above Book and work out the following exercises at the end of chapters 2, 3, and 6.

### Chapter 2: Simulation Examples in spread Sheets

Exercise 2.1

Exercise 2.4

Exercise 2.8

### Chapter 6 Queuing Models

Exercise 6.2

**Part 2: Simulation Using R: Book. Introduction to Scientific Programming and Simulation Using R-** Second Edition Owen Jones et.al. CRC Press.

Students have to read the Chapters 23 and test the R-Code given in the book as solved examples for epidemics (p. 491-499). Verify your results using R-programming language

\*\*\*\*\*