Code No. 6403 / N

FACULTY OF ENGINEERING

(CSE) (New)

B. E. 4/4 I - Semester (Main) Examination, December 2009 / January 2010

Subject : **Simulation and Modeling**
(Elective-I)

Time : 3 Hours} {Max. Marks: 75

Note: Answer **all** questions of Part - A and any **five** from Part-B. Answer to the questions of Part-A must be at one place and in the same order as they occur in the question paper. Missing data, if any, may be suitably assumed.

PART – A (25 Marks)

1. Discuss about applications of 'Simulation'. (3)
2. What are the disadvantages of 'Simulation'. (2)
3. Describe about 'Cumulative Distribution Function'. (3)
4. Differentiate between 'Discrete Random Variable' and 'Continuous Random Variable'. (2)
5. Describe about 'Linear Congruential Method'. (3)
6. Compare the features of 'Random Numbers' and 'Pseudo Random Numbers'. (2)
7. Discuss about 'Gamma Distribution'. (3)
8. What is 'Null Hypothesis'? Explain. (2)
9. Briefly explain about 'Stochastic Nature of Output Data'. (3)
10. Discuss about 'Non-terminating Simulation'. (2)

PART – B (5x10=50 Marks)

11. List and explain about various steps in a Simulation Study. (10)

12.(a) Describe about 'Poisson Process'. (5)
(b) Explain about 'Arrival Process for a finite-population model'. (5)

13.(a) What are the features of 'Exponential Distribution? Explain. (5)
(b) Discuss about 'Direct Transformation for the Normal Distribution'. (5)

14. Explain about following : (4+6)
(a) Quantile-Quantile Plots
(b) Kolmogorov-Smirnov Test

15.(a) Describe about the concept of 'Interval Estimation' to measure the performance. (5)
(b) Discuss about 'Replication Method for Steady-State Simulations'. (5)

16.(a) What are the features of 'GPSS' language? Explain. (5)
(b) Explain how to validate Input-Output using Historical Input Data. (5)

17. Write short notes on any **two** of the following : (5+5)
(a) Triangular Distribution
(b) Poker Test