

# FACULTY OF ENGINEERING

B.E. 4/4 (CSE) I – Semester (Supplementary) Examination, July 2012

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

Time : 3 hours

Max. Marks : 75

**Note:** Answer all questions from Part–A and answer any **FIVE** questions from Part–B.

## PART – A (25 Marks)

- |     |   |   |
|-----|---|---|
| 1.  | What is simulation? Discuss briefly.          | 3 |
| 2.  | List some areas of application of simulation. | 2 |
| 3.  | What is SLAM?                                 | 2 |
| 4.  | What is a queuing system?                     | 3 |
| 5.  | Define a pseudo-random number.                | 2 |
| 6.  | Write note on uniform distribution.           | 3 |
| 7.  | Explain about data collection.                | 3 |
| 8.  | Briefly discuss about model building.         | 2 |
| 9.  | Write about stochastic nature of output data. | 3 |
| 10. | What is a steady-state simulation?            | 2 |

## PART – B (50 Marks)

- 11.a) Write notes on discrete and continuous system.
- b) Give some simulation examples.
12. Give an overview of statistical models and queuing systems.
- 13.a) Explain the generation of pseudo-random numbers.
- b) Discuss about inverse transformation technique.
- 14.a) Discuss about tests for Goodness of fit.
- b) Write about verification of simulation models.
- 15.a) Explain about output analysis for steady state simulation.
- b) Write notes on statistical models for estimating the effect of design alternatives.
- 16.a) Discuss about discrete-event system simulation.
- b) Explain about exponential distribution.
17. Explain about :
- a) Multivariate and Time series input models.
- b) Validation of model assumptions