Punjab Technical University
Master of Computer Application Examination

MCA 5th Semester SYSTEM SIMULATION AND MODELLING 2006

Time: Three Hours Maximum Marks : 75
Note: Attempt any nine question from part-B, all questions carry equal marks. Part-A is compulsory.

Part – A

1. (a) What do you mean by continuous system simulation?
(b) Define the terms: System, and state of system
(c) What are the block oriented languages?
(d) Give two condition under which the two random variables will be independent.
(e) Why do you need system simulation?
(f) Differentiate between random and pseudo random variable>
(g) How are analog simulation is different from digital simulation?
(h) What is stationary process? Give example.
(i) Differentiated between SIEZE and ENTER block.
(j) Name various discrete system simulation languages.
(k) Describe the basic principle used in modeling.
(l) Give the formula for PDF of the inner-arrival time.
(m) Differentiate between FACILITY & STOREGE.
(n) Give the formula for cumulative distribution.
(o) What do you mean real time simulation.

Part – B

2. What is a uniformly distributed random variable. Find the mean and variance of a uniform distribution.
3. Define the term: Activity, Closed system, Stochastic Activity, Exogeneous activity, non-variant process.
4. Describe in brief the fixed step and Event-to-event model.
5. Differentiate between stochastic simulation and Monte carlo simulation with example.
6. Describe the simulation method for generating the pseudo random variables.
7. Draw the simulation block diagram for the following continuous system equation: Ÿ=2(1- Ÿ)+4Y
8. Describe the various techniques for generating of Arrival patterns in a queuing system.
9. Explain in block building principle of Modeling with the help of corporate model.
10. Discuss the simulation technique in a two-server queuing system
11. Describe in brief the network model of a project. Give its disadvantages.
12. Describe in brief the steps for simulating the public telephone system.
13. Explain in brief the feature of GPSS.