2005-PUNJAB TECHNICAL UNIVERSITY

B.TECH VIII SEMESTER DEGREE EXAMINATION

SYSTEM SIMULATION AND MODELING

(COMPUTER SCIENCE ENGINEERING)

TIME-3HOUR
MARKS-60

NOTE: SECTION A IS COMPULSORY. ATTEMPT ANY FOUR QUESTIONS FROM SECTION B AND TWO FROM SECTION C

SECTION A MARKS 2 EACH

1. Name several entities, attributes and state variables for the following systems:

(a) Grocery Store

(b) Educational institute

(c) Fashion clothing store

(d) Medical shop

(e) Fast food restaurant. Explain briefly.

(f) What is the need of simulation?

(g) What is Monte-Carlo simulation?

(h) What is meant by GPSS?

(i) What are the characteristics of a simulation system?

(j) Give some applications of simulation systems.

SECTION B MARKS 5 EACH

2. Give some features relevant for selecting simulation software.

3. How can random numbers so generated be tested for uniformity and independence?

4. Explain how physical basic be used to select probability distributions.

5. What is Monte-Carlo method? Explain.

6. For an exponentially distributed random variable z, find the value of lambda that satisfies the tau relationship $P(z < 4) = 0.9\ P\ (z < 5)$

SECTION C MARKS 10 EACH

7. What is the use of GPSS in simulation? Discuss some of its applications.

8. What are queuing models? Give characteristics of queuing models along with ways of measuring it.

9. What is simulation? Discuss advantages and applications of simulations. How are simulations actually performed?