

Tribhuvan University
Institute of Science and Technology
2080
☆

Bachelor Level / Third Year/ Fifth Semester/ Science
Computer Science and Information Technology (CSC.302)
(Simulation and Modelling)
OLD COURSE

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Group A

Attempt any TWO questions.

(2×10=20)

1. Why model of a system is built? What are different kinds of model? Explain each of them with example.
2. What is calling population? Explain different elements of queueing system in detail.
3. Explain the uniformity property of random numbers. The sequence of numbers 0.44, 0.64, 0.17, 0.21, 0.57, 0.77, 0.37 and 0.06 has been generated. Use Kolmogorov- Smirnov test if the numbers are uniformly distributed. ($D_\alpha = 0.565$ for $\alpha = 0.05$ and $N = 5$).

Group B

Attempt any EIGHT questions.

(8 × 5 = 40)

4. Differentiate between dynamic physical model and static physical model.
5. Explain Markov chain and its application.
6. Use the Multiplicative congruential method to generate a sequence of eight two-digit random integers where $X_0 = 7$, $a = 3$ and $m = 100$.
7. What is analog computer? Explain with an example.
8. What is Transaction in GPSS? Explain any four GPSS blocks.
9. Why validation and verification of a model is necessary? Explain.
10. What are different application areas of simulation? Explain.
11. What is estimation? Explain point estimation with example.
12. Write short notes on:
 - a) Kendall Notation
 - b) Face Validity