20. Explain measures of performance of Queueing Systems.

Or

Discuss steady state behavior of infinite population Markovian model.

Section D **4×8=32**

21. Explain Components of a System and types of Systems in detail.

Or

Discuss Models of System with diagram and examples.

22. Explain Monte Carlo Method and its applications in Simulation.

Or

Discuss different type of system simulation with suitable examples.

23. Compare and Contrast Continuous and Discrete Distributions with suitable examples.

No. of Printed Pages : 05 **Roll No. .....**

52056

B.C.A. EXAMINATION, 2026

(Second Semester)

(Re-appear Only)

(From 2019-20 Onwards)

MODELLING AND SIMULATION

Time : 3 *Hours*] [*Maximum Marks :* 80

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : All questions are compulsory.

Section A **1×12=12**

1. Define System Environment.

2. What is a Continuous System ?

3. Define Simulation.

4. What is Monte Carlo Method ?

5. Define Pseudo Random Numbers.

6. What is Stochastic Variable ?

7. Define Poisson Distribution.

8. What is Empirical Distribution ?

9. Define Continuous distribution.

10. What is meant by FIFO in queuing notation ?

11. Give one example of a queue model.

12. What does "Markovian" signify in queuing theory.

Section B **3×4=12**

13. Explain different types of models used in simulation.

14. Discuss properties of random numbers.

15. Explain Continuous Distribution with suitable example.

16. Discuss characteristics of Queueing Systems.

Section C **4×6=24**

17. Explain Discrete Event System Simulation with advantages and disadvantages.

Or

Describe different areas where Simulation techniques are applied.

18. Explain various techniques used for generating random numbers.

Or

Explain the concept of Real Time Simulation and its applications.

19. Describe various statistical models in Simulation with suitable examples.

Or

Discuss Discrete Probability distribution with suitable examples.

Or

Discuss Poisson's Process and Empirical Distribution in detail.

24. Explain the concept of queuing notation with all its components.

Or

How does component of queuing system affect system performance ?

❖❖❖❖❖❖❖

Or

Discuss Poisson's Process and Empirical Distribution in detail.

24. Explain the concept of queuing notation with all its components.

Or

How does component of queuing system affect system performance ?

❖❖❖❖❖❖❖