

Student Regd. No.

COURSE CODE: DCAP601

COURSE TITLE: SIMULATION AND MODELING

C

Date of Exam: 13 March

Time Allowed: 3 hours

Session 09:30-12:30

Max. Marks: 80

1. *This paper contains 10 questions divided in two parts on 1 page.*
2. **Part A is compulsory.**
3. ***In Part B (Questions 2 to 10), attempt any 6 questions out of 9. Attempt all parts of the questions chosen.***
4. *The marks assigned to each question are shown at the end of each question in square brackets.*
5. *Answer all questions in serial order.*
6. The student is required to attempt the question paper in **English medium only.**

PART-A

Q1.

- a. What do you understand by term simulation?
- b. What do you understand by system?
- c. What is discrete system simulation?
- d. Define continuous simulation
- e. What are the important parameters in queuing system?
- f. In how many ways Continuous Simulation Language can be classified?
- g. What is flowchart oriented language?
- h. What are two events that can cause a change in a queuing system's state?
- i. What is Analog Vs Digital Simulation?
- j. What is Discrete vs. Continuous Systems?

(10x2=20)

PART-B

Q2.Explain the simulation of water reservoir system

Q3. Discuss the simulation of single server queuing system

Q4.What is a model? Explain the various types of model with suitable example

Q5.Discuss in detail about the simulation of an inventory system

Q6. Explain the simulation of activity network

Q7.Explain the two different techniques for generating random numbers with example

Q8. Discuss in detail Fixed time-step vs event-to-event model with diagram.

Q9. What are the advantages of simulation?

Q10. What is major simulation software in manufacturing applications? Also discuss modeling system randomness.

(6x10=60)