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COURSE CODE: DCAP601
COURSE TITLE: Simulation and Modeling

Time Allowed: **3 hours** Max. Marks: **80**

1. This paper contains 10 questions divided in two parts on 2 pages.

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.

PART A

Question 1:

a) Define Continuous System Simulation
b) Define two fundamental types of the systems in simulation?
c) Define stochastic system?
d) List two effective methods used in planning and scheduling of large projects?
e) What do you mean by arranging the activities in topological order?
f) What do you mean by a simulation run?
g) List down the names of four combined simulation languages?
h) List down three main categories of Discrete system simulation language
i) "Three types of statements are used in designing of block structured continuous simulation language". Name them
j) How to simulate randomness? [10*2=20]

PART B

Q2. How to simulate Water Reservoir System?

Q3. Differentiate fixed time stamp and Event to Event model with example

Q4. What are the various operating characteristics of Queueing system?

Q5. How to simulate an environment for solving two server queue?

Q6. Discuss with example a network model of a project and discuss the terminology used in the network model?

Q7. Construct flowchart along with explanation to compute the critical path using forward pass and backward pass

Q8. Discuss the various guidelines for testing validity of a first-time model?

Q9. Examplify and elaborate the need of block structured language in simulating continuous system?

Q10. What do you mean by a system? Discuss in detail various kinds of system which can be simulated?

[6*10=60]

-- End of Question Paper --