Student Regd. No

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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 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 selected question.

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. (All are compulsory)

a. Define System with components.
b. Difference between modulation and simulation.
c. Give the resource allocation for simulation.
d. Define Simulation.
e. Discuss Random Variables.
f. Define Variance.
g. Define Validation.
h. Define fixed time stamp model.
i. Define length of simulation runs.
j. Define continuous simulation languages. [10×2=20]

PART B

Q2: What do you mean by system and sub system? Explain with examples the various types of system. [10]

Q3: How the simulation is possible for queuing system .Discuss with case study. [10]

Q4: Take any example to explain the concept of PERT network in system simulation. [10]

Q5: Differentiate between the Monte Carlo vs. stochastic simulation with examples. [10]

Q6: Differentiate between the continuous and discrete simulation languages. [10]

Q7: Explain two different techniques for generating the random numbers with examples. [10]

Q8: Design a case study for simulation of water reservoir system along with explanation. [10]

Q9: Compare and contrast between the analog vs. digital system simulation. [10]

Q10: Explain discrete random variables and continuous random variables with examples. [10]