Student Regd. No

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COURSE CODE: DCAP601
COURSE TITLE: *SIMULATION AND MODELLING*

Date of Exam:- 10 Sept **Session:- 9:30-12:30**
Time Allowed : 3 hours **Max. Marks: 80**

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

Q1:

a) What is CPM? [2]

b) What are different types of simulation languages? [2]

c) What is analog and digital simulation? [2]

d) Explain the key features found in the software simulation model? [2]

e) What are random numbers? Write Uses of random numbers? [2]

f) What are the different communication delays? [2]

g) Examine the disadvantages of a single-channel queue? [2]

h) Differentiate between optimistic and pessimistic time? [2]

i) Name the various Variance Reduction Techniques? [2]

j) What is Visualization? [2]

Part B

Q2. What is simulation? List a few advantages and disadvantages of simulation? [10]

Q3. Differentiate between

a.) Static Physical Models and Dynamic Physical Models [5]

b.) Deterministic and Stochastic activities [5]

Q4. What do you mean by system modeling? Write difference between continuous and Discrete Systems? [10]

Q5. What is queuing model? How it is useful for Simulation? Explain all different kind of Queuing Model in detail. [10]

Q6. Write short notes on

a. Monte –Carlo methods [5]

b. Numerical Computation Techniques [5]

Q7. Explain the pure pursuit problem of simulation? [10]

Q8. Find out the difference between Numerical Integration and Continuous System Simulation. Explain with examples. [10]

Q9. Differentiate Fixed Time Step v/s Event-to-Event Model with flow charts. [10]

Q10. What is pert network? Write Advantages and disadvantages of pert? [10]