Student Registration Number

B

COURSE CODE: DCAP601 **COURSE TITLE: Simulation and Modelling**

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.

(a) Difference between Bias, Mean Squared Error and Variance?

(b) A network diagram can be created by hand or by using diagram software. So which software is used in network diagram?

(c) Find out the difference between quantitative and qualitative predictions.

(d) What are model calibration techniques?

(e) Find out the difference between Numerical Integration and Continuous System Simulation

(f) Is it possible to decrease the critical path of a project? If yes than how?

(g) Specify the applications of Monte Carlo.

(h) What are the earliest methods for generating random numbers?

(i) What are Servo System Controllers?

(j) Outline the essential steps involved in carrying out a modeling and simulation study. [10×2=20]

PART-B

Q2. Make distinction between single-channel and multi-channel queuing system. Give examples. [10]

Q3. Describe the five key features found in the software simulation model. [10]

Q4. Explore the classification of two server simulation. Discuss in detail. [10]

Q5. How parallel simulation languages differ from general purpose programming languages? [10]

Q6. What is Discrete System Simulation? Examine the various components of discrete event simulation. [10]

Q7. PERT/CPM is effectual tool for project planning." Comment. [10]

Q8. Explain why the polar technique is simple to execute, but not chiefly fast. [10]

Q9. What are the steps required to make the simulation experiment? [10]

Q10. Do you think the use of pseudorandom numbers as opposed to true random numbers is a benefit? Explain. [10]