

M.Sc(CS) (Sem-IV) July-2023 (A)

Computer Science: Paper I - Simulation & Modeling.(Rev)

Time : 2 Hours

Total marks : 60

N.B.

- (1) All questions are compulsory.
- (2) Figures to the right indicate full marks.
- (3) Assume additional data if necessary but state the same clearly.
- (4) Symbols have their usual meanings and tables have their usual standard design unless stated otherwise.
- (5) Use of calculators and statistical tables are allowed.

- Q1** Attempt Any two of the following. **12**
- a** Write a short note on computer generated random numbers? **6**
 - b** Explain the discrete event simulation approach for telephone call center simulation? **6**
 - c** Explain three phases simulation model with the help of diagram? **6**
 - d** Why is simulation needed and explain the examples of interconnected system subjects to variability **6**
- Q2** Attempt Any two of the following. **12**
- a** Explain the paired t - approach in comparison of more than two scenarios? **6**
 - b** Explain Welch's method with its limitations simulation Modeling and object oriented software's design have a lot and common **6**
 - c** Explain in detail the three methods of white box validation and verification? **6**
 - d** explain the three methods in simulation modeling with example **6**

- Q3** Attempt Any two of the following. **12**
- a** Explain Synchronous and Asynchronous communication between agents. **6**
 - b** Explain the types of standard and custom network use in logic draw neat diagram for each. **6**
 - c** What are the different types of triggers used in state chart explain the function of each **6**
 - d** What is state chart and draw the example to show state chart and explain the state chart of laptop turning on battery? **6**
- Q4** Attempt Any two of the following. **12**
- a** What are the different types of triggers used in state chart explain the function of each? **6**
 - b** Explain the types of standard and custom network use in logic draw need diagram for each. **6**
 - c** What is state chart and how do state chart differ from action chart and flowchart. **6**
 - d** Describe database connectivity objects offered by any logic with help of an example. **6**
- Q5** Attempt Any two of the following. **12**
- a** Write briefly with example the application of simulation modeling. **6**
 - b** What are the types of models in Any-logic? **6**
 - c** Explain the different types of data validation. **6**
 - d** What is simulation optimization discuss short comings in its use. **6**
