

IT-711 (GS)

B.E. VII Semester Examination, June 2020

Grading System (GS)

Simulation and Modeling

Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. Explain in detail the various steps in simulation study.
2. Draw the analog computer diagram to solve the following simulation differential equation

$$2 \frac{d^2x}{dt^2} + 0.1 \frac{dx}{dt} + 4x = -10$$

$$x(0) = 5, \frac{dx}{dt}(0) = 0$$

3. Explain the terms:
 - i) Entity
 - ii) Attribute
 - iii) Activity
 - iv) Event and
 - v) State in the system simulation context
4. Differentiate between-
 - a) Continuous and discrete systems.
 - b) Static physical models and Dynamic physical models.
5.
 - a) Explain financial model for an office building.
 - b) Explain Analog and hybrid simulation in detail.
6. Explain the following Queuing system characteristics:
 - a) Calling population
 - b) System capacity
 - c) Arrival process
 - d) Queue behavior and discipline
 - e) Service time and service mechanism
7.
 - a) Design a supermarket simulation model using GPSS symbols.
 - b) Explain manual simulation using event scheduling with the help of a suitable example.
8. Write a short notes (Any two)
 - a) Feedback system
 - b) Techniques of simulation
 - c) Advantage and disadvantage of simulation
 - d) Queuing system
