

B.TECH.**THEORY EXAMINATION (SEM-IV) 2016-17**
BASICS OF SYSTEM MODELING AND SIMULATION**Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.****SECTION – A**

1. **Attempt the following:** (10 x 2 = 20)
- a) Define modelling.
 - b) What are discrete variables?
 - c) What do you mean by data model?
 - d) What is distributed lag?
 - e) What is CDF?
 - f) Define simulators.
 - g) What is service delay?
 - h) What is parameter data?
 - i) Define error.
 - j) Define quenching systems.

SECTION – B

2. **Attempt any five parts of the following:** (5 x 10 = 50)
- a) What are the properties of CDF? Explain.
 - b) Write down various steps for creating the system modelling with a suitable flow chart.
 - c) What is simulation? What are the needs, advantages and disadvantages of a simulation modelling? Also write any three names of process simulators.
 - d) What is system? Explain the components of a system with examples.
 - e) Explain the simulation of multiple server quenching system.
 - f) Explain the Monte Carlo method with example.
 - g) What is the criterion of selecting appropriate modelling techniques?
 - h) Explain the characteristics of quenching system.

SECTION – C

- Attempt any two of the following questions:** (2 x 15 = 30)
- 3. Discuss the Poisson and exponential distribution. Derive an expression for Poisson distribution.
 - 4. What are GOOD-OF-FIT tests? Explain all methods with the examples.
 - 5. Write short notes on:
 - (i) Computer network model
 - (ii) Optimization
 - (iii) Capital recovery model
 - (iv) Job shop model
 - (v) Pi value estimation.