

Roll Www.FirstRanker.com

www.FirstRanker.com

B.TECH.

THEORY EXAMINATION (SEM–IV) 2016-17 BASICS OF SYSTEM MODELING AND SIMULATION

Time : 3 Hours

Max. Marks : 100

 $(10 \times 2 = 20)$

 $(5 \times 10 = 50)$

Note: Be precise in your answer. In case of numerical problem assume data wherever not provided.

SECTION – A

1. Attempt the following:

- 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:

- **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:

- **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.

$(2 \times 15 = 30)$