

**M.Tech.**

**SIMULATION OF INDUSTRIAL SYSTEMS**

**SUBJECT CODE : IE - 504**

**Paper ID : [E0604]**

[Note : Please fill subject code and paper ID on OMR]

**Time : 03 Hours**

**Maximum Marks : 100**

**Instruction to Candidates:**

- 1) Attempt any **Five** questions.
- 2) All questions carry equal marks.

- Q1)** (a) What is meant by simulation of industrial systems and discuss its significance?
- (b) Discuss the characteristic features, applications and benefits of Monte Carlo technique.
- Q2)** (a) Discuss the differences in the characteristic features of continuous and discrete systems.
- (b) Discuss the general procedure adopted for the simulation of continuous systems.
- Q3)** (a) Discuss the significance of time flow mechanisms in the content of discrete systems.
- (b) What are random numbers and describe their significance in simulation of industrial systems. Describe, any one technique for their generation.
- Q4)** (a) Discuss the general characteristics of queues. Describe the difference between stationary and time dependent dues.
- (b) Discuss the main steps in the simulation of multiserver queues.
- Q5)** (a) Taking suitable examples, explain the need of simulation in inventory problems.
- (b) What is the need of demand forecasting? Discuss the general methodology of forecasting through simulation.

- Q6)** (a) What are the main points of difference between single variable deterministic and non-deterministic case search?
- (b) Explain stratified and antipathetic samplings in the context of design of simulation experiments.
- Q7)** (a) Discuss the general procedure of simulation of an elevator system.
- (b) Briefly describe the methodology for simulation of replacement & maintenance problems.
- Q8)** (a) Compare and contrast the characteristic features of continuous and discrete simulation languages.
- (b) What is meant by special purpose simulation languages? Discuss some of the limitations of SIMSCRIPT.

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