

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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