21/05/13

IT Sem VII Rev.
Simulation & Modelling

AGJ 1st half (e+) 1

**Con. 8859-13.** **(REVISED COURSE)** **GS–5581**

(3 Hours) **[ Total Marks : 100**

**N.B. :** (1) Question No. **1** is **compulsory**.
(2) Solve any **four** questions out of remaining **six** questions.

1. (a) Define system state, Event notice, Activity, Event list delay and clock. **10**
   (b) What are characteristics of queuing system ? **5**
   (c) Describe the event scheduling simulation. **5**

2. (a) What one used to obtain information about a process in the absence of input data ? Explain data collection for input modelling. **10**
   (b) Explain steps involved in simulation study. **10**

3. (a) Describe the input model for an inventory system if the lead time and demand are related. **10**
   (b) Explain types of model with examples. **10**

4. (a) Discuss the vairous issues in manifacturing and material handling simulation. **10**
   (b) Why random numbers used in simulation ? What are techniques used to generate them ? **10**

5. (a) Decribe the inventory system when – **10**
      (i) Lead time is zero
      (ii) Lead time is independent of demand and random
      (iii) Lead time is constant.
   (b) Mention some of the area when simulation can be applied. Also explain when a system cannot be simulated. **10**

6. (a) Give the equation for steady state parameters of M/G/1 queue and derive M/M/1 from M/G/1. **10**
   (b) What do you understand by model verification and validation ? How would you validate input-output transformation of a model ? **10**

7. Write short notes on any **two** :– **20**
   (a) Inverse transform technique
   (b) Poisson process properties
   (c) Trends in simulation software
   (d) Cobweb model.

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