M.C.A. Second Semester (Second Year) (CGS)
15533 : Elective - I : Modeling & Simulation : 4 MCA 5

P. Pages : 2

AV - 3284

Time : Three Hours

0125

Max. Marks : 80

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing book.

1. a) What is simulation? Why do we need system simulation? 8

   b) Explain the principles used in modeling. 6

OR

2. a) What is system? What are the basic components of system? Explain with e.g. 8

   b) Explain the concept of system analysis for corporate model. 6

3. a) Explain the numerical computation technique for continuous model. 7

   b) Explain cobweb models with an example. 6

OR

4. a) Explain distributed log model in brief. 7

   b) Explain continuous system simulation languages. 6

5. a) Explain modified Exponential Growth model. 7

   b) Explain the Computer Generation of random numbers. 6

OR

6. a) Explain the Discrete probability function with suitable example. 7

   b) Differentiate between Monte-Carlo method and stochastic simulation. 6

7. a) What is single server queue? Describe its simulation in brief. 7

   b) What is critical path? How it is analysed in simulation. 6

OR

8. a) What is PERT network? Explain its simulation in brief.   7

   b) Explain with e.g.:   6
      i) Dummy activity   ii) Critically Index
      iii) Uncertainties in activity duration

9. a) Explain length of simulation Run for stochastic simulation.   7

   b) What is validation? Explain validating an existing system in brief.   7

OR

10. a) What is congestion? How it is described Explain.   7

    b) What is Erlang distribution? Justify how it can be used to represent telephone traffic.   7

11. a) Explain the testing conditions in GPSS.   6

    b) Give the comparison of GPSS and SIMSCRIPT.   7

OR

12. a) Explain simulation of manufacturing shop with GPSS.   6

    b) Explain continuous and discrete simulation languages.   7

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