AQ – 2641

Fourth Semester M.C.A. Examination

MODELING AND SIMULATION

Paper – Elective

4 MCA 5

P. Pages : 2

Time : Three Hours] [Max. Marks : 80

Note : (1) Due credit will be given to neatness and adequate dimensions.
(2) Assume suitable data wherever necessary.
(3) Use pen of Blue/Black ink/refill only for writing the answer book.

1. (a) Define the term system. What are the basic components of system ? Explain with examples. 7

   (b) Explain in brief various types of models. 7

OR

2. (a) Define the term model, Justify item purpose. List out elements or components of model. Explain with examples. 7

   (b) Explain the concept of system Analysis for corporate model. 7

3. (a) What is system simulation ? Compare and contrast simulation with Analytical methods. 7

   (b) Explain cobwel models with examples. 6

OR

4. (a) Explain Numerical computation Technique for continuous model. 6

   (b) What is CSSLs ? Explain. 3

   (c) Differentiate between analog and hybrid computers. 4

5. (a) What is the objective of system Dynamics ? Explain exponential Growth models. 7

   (b) Explain the concept discrete probability functions in simulation. 6

OR

6. (a) Explain the method of generating random numbers using rejection method. 7

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

7. (a) What is PERT Network ? Explain its simulation in brief. 7

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

OR

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

(b) What is queuing system ? What are its different types ? Explain in brief. 6

9. (a) What is inventory control ? List out its elements and describe any one inventory control system in brief. 7

(b) What is congestion ? How it is described Explain. 6

OR

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

(b) Whta are different variance reduction techniques ? Explain in brief. 6

11. (a) What is GPSS ? List out GPSS block symbols and draw diagram for same. 7

(b) Explain simulation of manufacturing shop with GPSS. 7

OR

12. (a) Describe GPSS model of a simple Telephone system. 10

(b) What is SLMSCRIPT ? List of its components with purpose of each. 4