Printed Pages—2   **CA302**

MCA

(SEM. III) ODD SEMESTER THEORY EXAMINATION 2013-14

MODELLING AND SIMULATION

Time : 3 Hours   *Total Marks : 100*

Note :– Attempt questions from each Section as indicated.

SECTION–A

1. Attempt all parts :   **(10×2=20)**

    (a) Define the term simulation and experimental frame.

    (b) Write principles for building models.

    (c) Differentiate between physical and mathematical model.

    (d) Give any three situations when simulation is the appropriate tool and not an appropriate tool.

    (e) Define Model. What are the different types of models ? Name them.

    (f) What is Continuous Simulation ?

    (g) Differentiate between analog and digital simulation.

    (h) What do you mean by System Dynamics ?

    (i) What is PERT and CPM ?

    (j) What is object-oriented simulation ?

CA302/DNG-52513   *[Turn Over*

SECTION–B

2. Attempt any **three** parts :   (3×10=30)

(a) Name four principal entities, attributes and activities for the following systems :

     (i) A fast food restaurant

     (ii) A hospital emergency room

     (iii) A railway reservation system

     (iv) University examination system.

(b) Explain various techniques of simulation.

(c) Explain simulation of water reservoir system.

(d) Explain exponential growth model.

(e) Explain CSMP-III simulation language.

SECTION–C

3. Attempt any **five** questions :   (5×10=50)

(a) What do you mean by a Corporate Model ? Discuss full corporate model with the help of a suitable diagram.

(b) Describe different steps in simulation study.

(c) Define Discrete Simulation. Explain fixed-time step and event-to-event discrete simulation model.

(d) What are Pseudo-Random Numbers ? Explain methods of testing random number generation of uniformly distributed random numbers.

(e) Explain modified exponential growth model. What is generalization of growth models ?

(f) Explain MODSIM-III simulation language. What are its features ?

(g) Explain forward pass method to compute the critical path of an activity network.