Roll No. | | | | | | | | | | | | | Total No. of Pages : 01

Total No. of Questions : 08

M.Tech.(CAD/CAM) (Sem.–2)

SYSTEM DESIGN & ANALYSIS

Subject Code : ME-503

M.Code : 23507

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. **Attempt any FIVE questions out of EIGHT questions.**
2. **Each question carries TWENTY marks.**

1. What do you mean by system modeling? What do you understand by (i) entities (ii) attributes (iii) activities (iv) events and (v) state variables, of a system? Discuss with the help of a suitable example.
2. Differentiate between physical and mathematical models. Also discuss static and dynamic examples for both physical and mathematical models.
3. a) Discuss and compare the process of system analysis and system design.
   b) What is the objective of system dynamics? How is it applicable to business, social and environmental problems?
4. Discuss the differences in the characteristic features of continuous and discrete systems. Also discuss the general procedure adopted for the simulation of continuous systems.
5. What are continuous and discrete probability functions? Discuss the measures of a probability function.
6. a) What do you understand by analog simulation? What are the typical disadvantages of analog simulation?
   b) Differentiate between simulation and analytical methods used in observing system behavior.
7. a) Discuss the general structure of an optimization problem and its representation as a mathematical model.
   b) Give the algorithm of dynamic programming and illustrate it with an example.
8. Write short notes on :
   a) Perturbation analysis
   b) Techniques for creative design

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.