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Code No: A5504

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.Tech I Semester Examinations, March/April-2011
SYSTEM MODELLING AND SIMULATION
(EMBEDDED SYSTEMS)

Time: 3hours   **Max. Marks: 60**

Answer any five questions
All questions carry equal marks
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1.a) Define model. Explain various types of simulation models with suitable examples.
  b) Explain simulation of single server queuing system with suitable event diagrams.
                                                                                                                        [12]

2.a) Draw various symbols used in GPSS write a GPSS program for simulation of inventory system.
  b) Compare simulation packages and program languages.   [12]

3. List out various techniques for increasing the simulation validity and credibility. Explain the quantitative techniques to test validity of a model in detail.   [12]

4. With suitable examples explain the procedure for modeling input signals.   [12]

5.a) Why are disturbance signals necessary to be considered. Explain.
  b) What is system encapsulation? Explain.   [12]

6.a) Write an algorithm to generate random variates from exponential distribution.
  b) Explain characteristics of exponential and Poisson distribution.   [12]

7. People borrow gone with the wind from a local library and keep it for 21 ± 10 days. There is only one copy of the book in the library. You are the sixth person on the reservation list. Simulate 30 independent cycles of book borrowing to determine the probability that you will receive the book with in 100 days. [12]

8.a) Explain the cyclic co-ordinates method for multidimensional optimization.
  b) Explain α/β tracker with suitable algorithm and diagram.   [12]

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