Code No: D5503 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY 2012
SYSTEM MODELING 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. Classify and explain them.
b) What are the event driven models? Explain their characteristics.

2 What are the simulation diagrams? Draw simulation diagrams for simulation of single server queuing systems

3a) Determine the sequence of numbers generated by the LCG with a=5, c=3, m=16 and Z_o=7.
b) State and explain the statistical properties of U[0,1].

4a) Explain the inverse transform method to generate random variates from a given distribution.
b) Derive a formula by which to generate Weibull distributed random variates with mean μ and shape factor α.

5a) Explain the procedure for modeling input signals with example
b) Explain the importance of considering disturbance signals.

6a) Explain the procedure for the analysis of continuous- time Markov process.
b) Explain characteristics of exponential distribution and write algorithm to generate random variates from exponential distribution.

7a) Explain about Alpha/Beta tracker using a neat sketch.
b) Explain the correlation between the scientific method and simulation methodology by using flow chart.

8a) State and explain desirable features of simulation languages.
b) State and explain the guide lines for determining the level of model detail.

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