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Roll No

MCTA-301(E)

M.E./M.Tech., III Semester

Examination, June 2014

Simulation and Modeling (Elective-I)

Time : Three Hours

Maximum Marks : 70

Note: i) All the questions carry equal marks.
ii) Attempt any five questions.

1. a) Give comparison between simulation and analytical methods.
b) Draw a Cob Web model for the following market:
 $D = 12.4 - 1.2P$, $S = 8.0 + 0.6P$, $P_0 = 1.0$
2. a) Explain Distributed Lag Model with example.
b) Explain the process of simulating with Flow Chart.
3. a) Give simulation diagram and explanation for the Analog Computer Model.
b) Compare Hybrid simulation, Feedback systems and Interactive systems.
4. a) What are arrival patterns? Explain Poisson arrival patterns.
b) How does queuing control the request in a Network environment.

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5. a) Calculate the probability of there being n arrivals ($n = 0, 1, 2, 3, \dots, 10$) in an interval of 10 seconds when the arrival have a Poisson distribution with a mean value of 0.4.
b) How can we compute the steady state solution of the M/M/1 queue?
6. a) How does problem situation identify in simulation?
b) Explain exponential growth and exponential decay models.
7. a) Write different techniques for validation of experimental models?
b) Why System Regenerate it self, at every beginning of busy period?
8. a) What is List Processing? Explain with suitable figures.
b) How DYNAMO simplifies the equation? Explain and describe with example.

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