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Roll No .....

**MEDC-202****M.E./M.Tech. II Semester**

Examination, June 2016

**Modelling and Simulation of Computer***Time : Three Hours**Maximum Marks: 70***Note :** Attempt any five questions. All questions carry equal marks.

1. a) What do you mean by system modeling? Write difference between continuous and discrete systems? 7  
b) Describe the steps involved in Discrete event system simulation with the help of flow diagram. 7
2. Suppose that a Die-Hardly-Ever battery has an exponential time-to-failure distribution with a mean of 48 months. At 60 months, the battery is still operating.
  - i) What is the probability that this battery is going to die in the next 12 months?
  - ii) What is the probability that the battery dies in an odd year of its life?
  - iii) If the battery is operating at 60 months, compute the expected additional months of life. 14
3. a) What is queuing model? How it is useful for simulation? Explain all different kind of Queuing Model in detail. 7  
b) How to measure the performance using queuing system property. 7

4. a) Describe the Inverse Transform Technique in details. 7  
b) Discuss about the acceptance and rejection technique in detail. 7
5. a) Explain the different techniques of simulation output analysis. 7  
b) Explain the Model Building, verification and validation with the help of flow diagram. 7
6. a) Discuss about the parameter variation and goodness of fit tests in respect of modeling. 7  
b) Give the advantages and disadvantages of discrete event system simulation. 7
7. a) Explain about the multivariate and input models. 7  
b) Explain about the transient and steady state behaviour of queue system. 7
8. Write short notes on any two of the following: 14
  - a) Test for random number
  - b) Poison process
  - c) Direct transformation for normal distribution

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