CLASS: MTECH/PRE-PHD   SEMESTER : I/NA
BRANCH: AMS   SESSION : MO/18

SUBJECT: PE504 MODELING AND SIMULATION

TIME: 03:00 HRS.   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1(a)	Classify various simulation models on the basis of their time and probability.	[5]
Q.1(b)	Give a detailed discussion with the help of a flowchart for showing various steps in a typical simulation study.	[5]
Q.2(a)	Describe the simulation of an (M, N) inventory system assuming suitable data for maximum inventory, review period and lead time.	[5]
Q.2(b)	Name some entities, attributes, activities and events for the following two systems: An automobile assembly line and a cafeteria	[5]
Q.3(a)	Write about the simulation software and programming languages for simulation of manufacturing systems.	[5]
Q.3(b)	Give a detailed description of criteria for the selection of simulation software.	[5]
Q.4(a)	Discuss various techniques for generating pseudo-random numbers.	[5]
Q.4(b)	Define density and cycling in the context of random numbers. Find the period and mention the rule in a multiplicative congruential method to generate random numbers with m =256, a = 13 and X_0 = 7.	[5]
Q.5(a)	Write the various steps for conducting a validation of a simulation model.	[5]
Q.5(b)	Write brief notes on face validity, calibration of model and sensitivity analysis.	[5]

******30.11.18******M