Registration no: | | | | | | | | | | |

Total Number of Pages: 2 **M.TECH**
EIPC 202

2nd Semester MTech Regular/ Back Examination – 2014-15
MODELING & SIMULATION
BRANCH(S):
APPLIED ELECTRONICS AND INSTRUMENTATION ENGINEERING
Electronics and Instrumentation Engineering
Time: 3 Hours
Max marks: 70
Q. Code:T216 T217
Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: (2 x 10)

a) Why simulation model is chosen for analysis rather than using an actual model?
b) What is meant by Simulation Clock?
c) What is Object Oriented Programming?
d) What is a Stochastic Process?
e) Define a Random Variable.
f) What is an Arrival Process?
g) Distinguish between Paired-t Confidence Interval and 2-Sample-t Confidence Interval.
h) What is Control Variate?
i) List a few reasons for designing and optimizing manufacturing system.
j) What are FlexSim and Promodel?

Q2 a) Describe the steps required for a sound simulation study with flow chart. (5)
b) Briefly describe Time-Shared Computer Model with an example. (5)

Q3 a) List types of Simulation Software Packages available for simulation. What are the desirable features for selecting a Simulation Software? (5)
b) Define Verification, Validation, Credibility and Accreditation. Explain their Timing and Relationship flow chart. (5)

Q4 a) Why Minimum Likelihood Estimators (MLEs) are important? Describe properties of MLEs. (5)
b) Briefly describe properties of a good Random Number Generator. (5)

Q5 a) Describe basic principle of generating Random Numbers using any ONE method. (5)
b) Briefly explain Transient and steady State Distribution. Also distinguish between Terminating and Non-Terminating Simulation. (5)

Q6 a) What is Ranking and Selection Approach? Write down one of the best procedures for selecting the best K system. (5)

b) Briefly describe any ONE method of Variance Reduction Technique. (5)

Q7 a) Describe principle of any ONE method for optimizing a Simulation. (5)
b) Illustrate a Simulation Study of a Parts Manufacturing Factory. (5)

Q8 Answer the following **(Any Two)** (5 x 2)
a) Distinguish between Sequential allocation Approach and Linked Allocation Approach.
b) Briefly explain any ONE method of Testing Random Generators.
c) Briefly explain any ONE Algorithm for generating Discrete Random Variates.
d) Briefly describe objectives of Simulation in Manufacturing Process.