Printed Pages: 01 **Sub Code:NMCAE32**

Paper Id: 214558 **Roll No.** | | | | | | | | | | |

MCA

(SEM V) THEORY EXAMINATION 2018-19

SIMULATION & MODELING

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Define event orientation and process orientation?
b. Write the relationship between $L,\ W,\ L_q\ and\ W_q$?
c. Differentiate between Analytical and Numerical Simulation?
d. Write down the little formulae Queuing?
e. What is the Calling Population Model?
f. Difference between Normal and Long Normal Distribution?
g. What do you understand by the term Face Validity of a conceptual model?
h. Define Queue Behavior and Discipline?
i. Name any four Simulation Software?
j. What is model and component of a system?

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30

a. Compare the features Statistical Analyze tools?
b. Explain the list processing in details?
c. Differentiate between Monte Carlo and Stochastic Simulation?
d. Explain the Telephone System Model?
e. Explain the Simulation of PERT network?

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

(a) Explain the step involved in the development of a useful model of input data?
(b) Explain the distribution of the linkage? What is the probability that the linkage will be longer than 150.2 centimeter?

4. Attempt any *one* part of the following: 10 x 1 = 10

(a) What do you mean cumulative distribution function and also explain its various properties?
(b) Explain the different way of selecting input models when data is not available?

5. Attempt any *one* part of the following: 10 x 1 = 10

(a) Explain the iterative process calibrating a model?
(b) What is Discrete Distribution and also explain Bernoulli Distribution?

6. Attempt any *one* part of the following: 10 x 1 = 10

(a) Explain System Dynamic? Difference between Exponential growth model and Modified Exponential growth model?
(b) Draw a neat diagram for System Dynamic? Explain its various features?

7. Attempt any *one* part of the following: 10 x 1 = 10

(a) What do you mean by CPM networks? Explain the construction rules for network?
(b) Draw a network to the following information and obtain the early and late start and completion times and determine the critical activities.

Activity:	1-2	1-3	2-6	3-4	3-5	4-6	5-6	5-7	6-7
Duration:	4	6	8	7	4	6	5	19	10