PAPER ID-311117

Roll No: | | | | | | | | | | | | | |

MCA
(SEM III) THEORY EXAMINATION 2024-25
SIMULATION & MODELING

TIME: 3 HRS **M.MARKS: 100**

Note: Attempt all Sections. In case of any missing data, choose suitably.

SECTION A

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

Q no.	Question	CO	Level
a.	Define the term Component.	1	K1
b.	Define event orientation and process orientation?	1	K1
c.	What is Dynamic Model?	2	K2
d.	What is Hybrid Simulation?	2	K2
e.	Define Activity Network.	3	K1
f.	Give the advantages of Poisson Distribution?	3	K4
g.	Define Queue Behavior and Discipline?	4	K2
h.	Define Experimental Frames?	4	K2
i.	What is real world application of Simulation?	5	K1
j.	What is Probability Density Function?	5	K1

SECTION B

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

Q no.	Question	CO	Level
a.	Give the difference Analog VS Digital Simulation?	1	K1
b.	What is the method of testing random number generation of non uniformly distributed random number? Discuss.	2	K4
c.	What is network of Queuing? Mention the general assumption for a stable system with infinite calling population?	3	K4
d.	Define and Explain feedback system with diagram and its applications?	4	K2
e.	What do you mean by critical path? Explain any algorithm for finding the critical path?	5	K4

SECTION C

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

Q no.	Question	CO	Level
a.	Compare the features Statistical Analyze tools?	1	K1
b.	Discuss the applications of network queuing model.	1	K1

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

Q no.	Question	CO	Level
a.	Explain with an example the Kolmogorov-Smimov test for random numbers.	2	K4
b.	What are the block oriented languages? Discuss in detail.	2	K4

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

Q no.	Question	CO	Level
a.	Write down the different testing for random number generator?	3	K4
b.	How can we ensure optimization via simulation with example?	3	K4

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

Q no.	Question	CO	Level
a.	What do you understand by System Dynamics? Also differentiate between Exponential Growth Model and Exponential Decay Model.	4	K2
b.	Explain the Normal Distribution? How is it differ from Poisson distribution?	4	K2

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

Q no.	Question	CO	Level
a.	Illustrate the use of SINISCRIPT for defining the Telephone System Model.	5	K4
b.	Explain logistic curves with the help of diagram?	5	K4