

[M19CAD1108]

**I M. Tech I Semester (R19) Regular Examinations**  
**MODELLING AND SIMULATION OF MANUFACTURING SYSTEMS**  
**Department of Mechanical Engineering**  
**MODEL QUESTION PAPER**

**TIME: 3Hrs.**

**Max. Marks: 75 M**

Answer **ONE Question** from **EACH UNIT**.

All questions carry equal marks.

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			CO	KL	M
		<b>UNIT-I</b>			
1.	a).	Explain the terms system, model and simulation.	1	2	8
	b).	Explain in detail the various steps involved in developing a simulation model.	1	2	7
		<b>OR</b>			
2.	a).	Explain various advantages and disadvantages of simulation.	1	2	8
	b).	Write about applications of simulation in Manufacturing system.	1	2	7
		<b>UNIT-II</b>			
3.	a).	Explain the characteristics of following distributions: (i)Poisson; (ii)Geometric; & (iii) Uniform	2	2	8
	b).	Explain the terms (i) Null hypothesis; & (ii) Alternative hypothesis	2	2	7
		<b>OR</b>			
4.	a).	What is normal probability distribution?	2	2	8
	b).	Explain the exponential distribution with example.	2	2	7
		<b>UNIT-III</b>			
5.	a).	Explain inverse Transform method, acceptance-rejection method.	3	2	8
	b).	Write about challenges in generating pseudo random numbers.	3	2	7
		<b>OR</b>			
6.	a).	Use LCG method to generate sequence of random numbers when $m=63$ , $a=22$ , $c=4$ a seed value $z_0=19$ .	3	3	8
	b).	Using mid square method generate 10 random numbers when $X_0 = 3043$ .	3	3	7
		<b>UNIT-IV</b>			
7.	a).	Explain the terms (i) verification; (ii) validation; & (iii)credibility	4	2	8
	b).	Explain various principles involved in developing of valid simulation model.	4	2	7
		<b>OR</b>			
8.	a).	Explain any four techniques for verification of simulation.	4	2	8
	b).	Write about history of simulation languages.	4	2	7
		<b>UNIT-V</b>			
9.	a).	Explain open and closed queuing networks with example.	5	2	8

	b).	Explain stochastic process in manufacturing.	5	2	7
		OR			
10.	a).	Write a short note on simulation of M/M/1 queuing model.	5	2	8
	b).	Explain continuous time markov chain model with example.	5	2	7

**CO-CRSE TCOME**
**KL-KNOWLEDGE LEVEL**
**M-MARKS**

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