

**M. TECH.-I (MECHANICAL CAD/CAM) (CBCS – 2015
COURSE) : SUMMER - 2018
SUBJET: MODELING AND SIMULATION**

Day: **Wednesday**
Date: **30/05/2018**

S-2018-2983

Time: **11.00 AM TO 02.00 PM**
Max Marks: 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Both the sections should be written in the **SEPARATE** answer book.

SECTION-I

Q.1 Explain modeling of simulation process with flowchart (10)

OR

Q.1 Explain continuous system simulation.

Q.2 Explain the simulation process with flowchart (10)

OR

Q.2 Determine the value of Π using monte carlo method.

Q.3 Explain normal and standard normal distribution. (10)

OR

Q.3 A box contains 5 balls. Two one numbered 3, one is numbered 4, and two are numbered 5. The balls are mixed and one is selected at random. After a ball is selected, its number is recorded. Then it is replaced. If the experiment is repeated many times, find variance and standard derivation of the number on the balls.

SECTION-II

Q.4 Explain with neat sketch simulation of water reservoir system. (10)

OR

Q.4 Write matlab code for simulation of simple pendulum.

Q.5 Derive the relations for EOQ. (10)

OR

Q.5 The data for single channel queuing system is

Inter arrival time		Service time	
Minutes	Probability	Minarets	Probability
2	0.15	1	0.1
4	0.23	3	0.22
6	0.35	5	0.35
8	0.17	7	0.23
10	0.10	9	0.10

Simulate the system for 60 minutes. Random numbers ore
93,14,72,10,21,81,87,90,38,10,29,17,11,68,99,51,40,30,52,and 71

Q.6 Explain any simulation language. (10)

OR

Q.6 Explain validation and accreditation in modeling and simulation life cycle.