Seat 110	Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER II (NEW) - • EXAMINATION - SUMMER 2016

Subject Code: 2725010
Subject Name: SIMULATION MODELING OF MANUFACTURING SYSTEM
Time: 10:30 am to 01:00 pm
Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q-1 (a) Differentiate between discrete and continuous system with suitable example.

(b) What is simulation and mention different types of simulation models and explain about numerical computation technique for continuous model.

Q-2 (a) Enlist various application areas of simulation and explain any two with suitable example.

How the mathematical solutions of queuing problems be done?

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(b) Enlist the possible validation techniques in order of increasing cost-to value ratios.

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(b) How the simulation of output data analysis be done in practice? 07

Q-3 (a) Describe the need for output data analysis. Explain "terminating simulation" with suitable example.

(b) Explain Triangular distribution and enlist its applications. Find Probability (6.5 < X < 8) for a triangular distribution with minimum value a=1, maximum value b=9 and peak value c=6.

OR

Q-3 (a) Explain and derive its mean and variance. Give some applications of Weibull distribution in manufacturing systems

(b) Describe about modeling and various techniques for verification.

Q-4 (a) Enlist the techniques for increasing the validity and credibility of a simulation model. Explain any one with suitable example.

(b) Explain Inverse Transform techniques for random variate generation with suitable example.

OR

Q-4 (a) Enlist the advantages and disadvantages of using a simulation packages over general purpose programming languages.

(b) What is "Queuing System"? Give at least three examples of real world queuing system with their servers and Customers.

Q-5 (a) What are the desirable software features? Explain any two of them. **07**

(b) Describe the criteria for evaluation and selection of simulation software.

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Q-5 (a) Explain about Flow Shop System and Job Shop System.

(b) Explain about statistical procedures for developing credible model and cobwel model.