



Printed Pages : 2

TMT-032

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 0470**

Roll No.

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**B. Tech.****(SEM. VIII) EXAMINATION, 2007-08****SIMULATION & MODELING***Time : 3 Hours]**[Total Marks : 100*

- Note:** (1) Answer all questions.  
(2) Be precise in your answer.

**1** Attempt any **two** parts of the following: **10×2=20**

- (a) State and explain why modeling is finding wide application in system analysis and which of the different types of model is most useful in decision making.
- (b) What is role of simulation in model evaluation and studies? Discuss the advantages and shortcomings.
- (c) What does mean by entity, attribute and activity? Take an example of any system and list entities, attributes and activities in that system. Discuss stochastic activity in brief.

**2** Attempt any **two** parts of the following: **10×2=20**

- (a) What are general steps in developing and running a simulation model? Discuss.



- (b) The major goals of manufacturing simulation models are to identify problem areas and quantify system performance. Comment on it.
- (c) Discuss the following in brief.
  - (i) Storage systems
  - (ii) Conveyors

3 Attempt any **two** parts of the following : **10×2=20**

- (a) What is random number? Discuss in brief Multiplicative congruential and midsquare method for generation of random numbers.
- (b) Explain 'Discrete' and 'continuous' distributions giving suitable examples.
- (c) How would you reduce the sampling error of an estimate derived from simulated observation? Discuss.

4 Attempt any **two** parts of the following : **10×2=20**

- (a) What does mean by 'Cause and effect'? Discuss causal loop diagram, taking suitable examples.
- (b) Explain 'source', 'sink', 'level', 'rate', and 'constant' related to system dynamics model. Sketch a diagram to show the interrelationship among all these elements.
- (c) Write short note on simulation of system dynamics.

5 Attempt any **two** parts of the following: **10×2=20**

- (a) List the different methods of validation. Discuss one of them in detail.
- (b) Discuss the salient features of DYNAMO language.
- (c) Sketch SIMSCRIPT execution cycle and explain each element.

