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Roll No.: Sub.: Simulation (Copy-2)

Exam sura Questions:

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#		Important Questions for Exams:		
(1)		Why simulation is essential in ~~step~~ depicting in real world proble. Differentiate continuous and discrete systems?		
(2)		What are the steps use in simulation study explain with flow chart.		
(3)		Why Monte Carlo Method is based for computing statte model? Derive the value of 'pi' using Monte Carlo Simulation, Method.		
(3)		Draw Cobweb model for the following market (i) Fluctuation of market price. (ii) Cobweb model for market economic graph from given data, $D = 12.4 - 1.2\,P$ → Demand $S = 8.0 - 0.6\,P_{-1}$ → Supply $D = S$ $P_0 = 1$ → Market Price		
(4)		Explain real time simulation. And write CSMP program for the following differential equation. $8x''' + 2x'' - 9x = 10$		

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(5) Explain the (lost call system)?

V. Important

(6) How you can gather statistics in simulation. (7 ~~point~~ steps)
(Count, occupancy, ...)

(7) If we have a sequence of 4000 (that is N = 4000), 3 digits random number from 000 to 999. Then we can have, ~~save~~ n = 10 classes in the range 00-99, 100-199, 200-299, 300-399, 400-499, 500-599 .... 900-999. Then the expected number of occurance in each class is given by,

$$E_i = \frac{N}{n} = \frac{4000}{10} = 400$$

Now, we have to measure how far the observe ~~for value~~ frequency deviates from the expected value. that is if deviation from 400 is to merge than we would suspend about non-uniformity. If too much we would So, by how much deviation is accepted in sequence to be uniformly distributed is given by chi-square test. (Observe vale & expected value).

(8) Consider a factory that manufactures football, taking 30 to 40 minutes. The ball is move from the generation to the inspection machine taking 5 for 2 minutes. There are 3 inspection machine at one place and needs 30 to 50 minutes for inspection and reject 30% of football. Simulate for 1000 transaction.

→ Old Questions:

1. Explain the elimination of initial bias in simulation in detail?

2. Write short note :-
   (i) Short Pseudo Random Number
   (ii) Predator - Prey Model
   (iii) Analog computer.
   (iv) Single Server Queuing Model