

[Time: Three Hours]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Answers to the two sections must be written in same answer book and should be submitted together.
 3. Write answers to same questions together.
 4. Mixing of sub-questions is not allowed.

SECTION - I

- Q.1** A) Explain Components of system. **06**
 B) Write advantages and disadvantages of simulation. **07**

OR

- Q.1** A) Write short note on "Application of simulation". **06**
 B) A computer terminal retail person is "beeped" each die, there is a call for service, the no. of base per hour is known to occur in accordance with a Poisson's distribution with a mean of $\lambda = 2$ per hour. **07**
- i. Find the probability of 3 beeps in the next hour.
 - ii. Find the probability of 2 or more beeps in the next hour.

- Q.2** A) What are the different types of models? Give example for each. **06**
 B) A production process manufactures electric bulbs on the average at 2% non-confirming. Every day, a random sample of size 50 is taken from the process. If the sample contains more than two non-confirming bulbs, the process will be stopped. Compute the probability that the process is stopped by the sampling scheme. **07**

OR

- A) A bus arrives every 20 mins. At specify stop beginning at 6:40 a.m. and continue until 8:40 a.m. A certain Passengers does not know the schedule but bus arrives randomly that is uniformly distributed between 7:00 a.m. and 7:30 a.m. every morning. What is the probability that the passenger wait more than 5 min. for a bus? **06**
 B) What is meant by simulation? Explain different types of simulation. **07**

- Q.3** A) What are characteristics of queuing system? **06**
 B) Consider the sequence of 40 numbers: **06**

0.52	0.99	0.46	0.58	0.64	0.25	0.88	0.11	0.20	0.18
0.97	0.44	0.43	0.94	0.82	0.60	0.73	0.69	0.21	0.03
0.04	0.81	0.85	0.3	0.47	0.96	0.17	0.72	0.62	0.27
0.10	0.60	0.34	0.65	0.79	0.44	0.02	0.37	0.48	0.50

Determine whether the hypothesis of independence can be rejected based on runs up and down where $\alpha = 0.05$.

OR

- A) Explain properties of Poisson process. **06**
 B) The sequence of numbers 0.14, 0.05, 0.44, 0.81, 0.93 has been generated. Use the Kolmogorov Smirnov test with $\alpha = 0.05$ to perform a test of uniformity. **06**

SECTION - II

- Q.4** A) Explain the features of Object Oriented Programming Language. **06**
B) What is COM technology? What are its Application? **07**
OR
- Q.4** A) Write Short note on distributed object system. **06**
B) What is Object Web? Explain with proper example. **07**
- Q.5** A) Write a short note on (a) OMG (b) IDL. **06**
B) How EJB is useful for business? Justify your answer with example. **06**
OR
- Q.5** A) Write a short note on (a) Class emulation (b) Query Interface. **06**
B) How Cross Apartments Communication is done? Explain. **06**
- Q.6** A) How CORBA make easy your communication over network? Explain advantage of CORBA. **06**
B) Explain the use of JNI in real word. **06**
OR
- Q.6** A) Explain any five services of CORBA. **06**
B) What do you mean by Dynamic Linking? Explain with proper example. **06**
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