

13/12/2011

BE IT Sem-VII (OLD)
Computer Simulation & Modeling

Con. 6762-11.

(OLD COURSE)

MP-6277

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No.1 is **compulsory**.
 (2) Attempt any **four** out of the remaining **six** questions.
 (3) Assume **suitable** data wherever **required**.
 (4) **Figures** to the **right** indicate **full** marks.

1.
 - A. Explain in detail the 3-step approach of Naylor and finger in the validation process. 10
 - B. Describe in detail the steps involved in the development of the model of input data. How do you collect input data? 10
2.
 - A. "Dili-Bahar is a fast-food restaurant where, customers arrive randomly. Some of the customers go to the sandwich counter, while the rest go to the soup and beverages counter. Both counters have exponentially distributed service times. After the customers eat, they pay at a single cash counter, which again has an exponentially distributed service time. Queues are usually formed in front of all the counters. A customer leaves after the payment is made". Explain the steps to develop a simulation model for the fast-food restaurant? How will you collect data for validation of the model? 12
 - B. What are the advantages and disadvantages of using a special-purpose simulation package over a general-purpose language such as C++? 08
3.
 - A. Given the following sequence of the numbers below. Can the hypothesis that the numbers are independent be rejected on the basis of the length of runs above and below the mean at $\alpha = 0.05$? (given $Z_{0.025} = 1.96$) 10

0.34	0.90	0.25	0.89	0.87	0.44	0.12	0.21	0.46	0.67
0.83	0.76	0.09	0.64	0.70	0.81	0.04	0.74	0.22	0.74
0.96	0.99	0.27	0.67	0.56	0.41	0.52	0.73	0.99	0.02
 - B. Discuss the output analysis for terminating simulations and confidence interval estimation for a fixed number of replications. 10
4.
 - A. What are pseudo random numbers? Briefly discuss the frequency test for testing whether they form random sequences. 10
 - B. Discuss advantages and disadvantages of simulation. 10

[TURN OVER

Con. 6762-MP-6277-11.**2**

- 5.
- A. IQ scores are normally distributed throughout society with a mean of 100 and a S.D. of 15. A person with an IQ of 140 or higher is called a "genius". 09
 - i. What proportion of people in the society is in genius category?
 - ii. What proportion of the society will miss the genius category by 5 or less points?
 - iii. An IQ of 110 or better is required to make it through an accredited college or university. What proportion of society could be eliminated from completing a higher education based on a low IQ score?
 - B. How can we use inverse transformation techniques to sample from the exponential distribution? Explain step by step procedure used in this technique. 07
 - C. Explain Lead-Time demand in an inventory system. 04
- 6.
- A. What do you mean by time-series input model? Explain both AR(1) and EAR(1) Model. 10
 - B. The following data were available for the past 10 years on demand and lead time. 06

Lead time : 6.5, 4.3, 6.9, 6.0, 6.9, 6.9, 5.8, 7.3, 4.5, 6.3

Demand : 103, 83, 116, 97, 112, 104, 106, 109, 92, 96

Estimate correlation and covariance.
 - C. Name entities, attributes, activities, events and state variables for 04
 - i. Communication system
 - ii. Banking system.
7. Write Short Notes: (any TWO) 20
- A. Time-Advance Algorithm
 - B. Steps in simulation study
 - C. Selection of Simulation Software
 - D. Goals and Performance Measures of Manufacturing simulation models.
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2/12/2011

BE IT (OLD) VII
MIS

30: 2nd Half-Exam.-11 min (c).

Con. 6260-11.

(OLD COURSE)

MP-5830

(3 Hours)

[Total Marks : 100

- N. B. :** (1) Question Number 1 is **compulsory**.
(2) Attempt any **four** questions from Q. No. 2 to 7.
(3) **Use** diagrams wherever **necessary**.
(4) Assume **suitable** data wherever **required** but justify the **same**.

1. (a) Explain Decision support and decision making system. 10
(b) Explain organizational structure of MIS. 10
 2. (a) Explain Supply chain management with example. 10
(b) Explain Detailed system design of MIS. 10
 3. (a) Explain conceptual system design for MIS. 10
(b) Explain Implementation of MIS. 10
 4. (a) Explain application of MIS in Service sector. 10
(b) Explain maintenance of MIS. 10
 5. (a) Explain Procurement management system. 10
(b) Explain application of MIS in Manufacturing sector. 10
 6. (a) Explain C R M in detail. 10
(b) Explain different pitfalls in MIS development. 10
 7. (a) Explain importance of documentation in MIS. 10
(b) Define information .What are the different parameters for quality of information. 10
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Con.6670-11.

(OLD COURSE)

(3 Hours)

MP-6292

[Total Marks :100

N.B.: (1) Question No. 1 is **compulsory**.(2) Attempt **five** questions.(3) Draw neat **diagram**.

1. (a) Explain any distributed object you know. 10
(b) What are the reasons to distribute for centralized object ? Explain. 10
 2. (a) Explain multitier system architectures in general. 10
(b) How to separate interface from implementation ? Explain with example. 10
 3. (a) Explain the concept of MIDL. 10
(b) What are the essential services of COM/CORBA ? 10
 4. Explain COM/CORBA similarities and differences with table. 20
 5. (a) Explain Lifecycle Management with respect to Apartments. 10
(b) Explain the interface lunknown for COM. 10
 6. (a) Explain three activation primitive in COM. 10
(b) Give the implementation of Query Interface. 10
 7. Short notes any (**two**) 20
 - (a) EJB
 - (b) JNI Interface
 - (c) Binary Composition.
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- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions from remaining **six** questions.
 (3) Draw the **neat** diagrams wherever **necessary**.

1. Justify / contradict the following :-

20

1. To get a good facial image make up is a must
2. Ideal low pass filters give ringing effect.
3. Laplacian operator gives double edge response to the step change
4. Over sampling results in aliasing effect.
5. Brightness discrimination is high in bright light .

2.(a) Compare median filter and averaging filter. Apply them to the following image and analyse the effects. 10

0	0	0	7	7	7
0	0	7	7	7	7
0	0	0	7	7	7
0	0	0	7	7	7
0	0	0	0	7	7
0	0	7	7	7	7
0	0	0	7	7	7

2.(b) Explain sampling and quantization stages for image digitization. Compare uniform and non uniform sampling and their effect on to the image. 10

3.(a) Explain the different sources of images other than visible light and give the examples of each source. 10

3.(b) Explain the basic logical operators used for binary image processing. Apply any 4 of them on to A and B 10

A =

1	1	0	0	1	1
1	1	0	0	1	1
1	1	0	0	1	1
1	1	0	0	1	1
1	1	0	0	1	1

B =

0	0	1	1	0	0
0	0	1	1	0	0
0	0	1	1	0	0
0	0	1	1	0	0
0	0	1	1	0	0

4.(a) Explain image sharpening. Also explain the effect of adding more of the original image in the process of sharpening. 10

4.(b) A 3 bpp image has the following distribution. Perform histogram equalization. Show both original and transformed histograms. 10

Gray level rk	0	1	2	3	4	5	6	7
% of pixels	2%	20%	50%	3%	2%	3%	15%	5%

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|-------|---|----|
| 5.(a) | Differentiate between region based and boundary based segmentations. Explain the use of Thresholding in both cases. | 10 |
| 5.(b) | Differentiate between image processing and computer Graphics. Explain the graphics primitives and the transformations. | 10 |
| 6.(a) | Explain the effect of illumination and reflection of light on the image formation. Explain how homomorphic filter will help in enhancing these components of the image. | 10 |
| 6.(b) | Explain the use of opening, closing and pruning operators as noise cleaners. | 10 |
| 7.(a) | Explain signature as boundary representation. Represent the rectangle shaped boundary in the form of signature. | 10 |
| 7.(b) | Explain image pyramid and the quality of information in each level of the pyramid. Explain how pyramid can be generated. | 10 |
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