

**UNIVERSITY CENTRE FOR DISTANCE LEARNING
CHAUDHARY DEVILAL UNIVERSITY SIRSA**

MCA-3rd year

System Simulation (341)

ASSIGNMENT-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is Simulation? Explain various steps of a simulation.
2. Discuss the inventory problem. Draw and explain the flowchart for simulating an inventory problem.
3. What is the basic nature of Simulation? Discuss the uses of simulation in different fields.
4. Explain the elements of inventory theory.
5. Differentiate the following: i) Numerical Integration and Continuous System Simulation
ii) Analog vs. Digital Simulation.
6. Discuss the simulation of generation of non-uniformly distributed random numbers.
7. Differentiate the following: i) Fixed time-step and event to event model with the help of flow chart.
ii) Monte Carlo computation and stochastic simulation
8. Explain the simulation of a Water reservoir system.
9. What do you mean by Rudiments of queuing theory? Discuss Poisson Arrival pattern.
10. Discuss the simulation of Single-Server queue with the help of flow chart.

ASSIGNMENT-II

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What do you mean by two server queuing system? Simulate this with flow chart.
2. Draw and discuss flow charts of backward pass and forward pass for critical path computation.
3. Explain the following: i) Forecasting and aggression analysis ii) Validation
4. What are Variance Reduction Techniques? Discuss its different types.
5. Explain the following classification of Simulation models:
 - i) Static vs. dynamic
 - ii) Deterministic vs. stochastic
 - iii) Continuous vs. discrete
6. Differentiate between Block-structured continuous simulation languages and Expression based Simulation languages.
7. Explain the following: i) poisson and Erlang variates ii) Experimental layout
8. Discuss the classification of simulation languages. Also explain SIMSCRIPT, SIMULA and GPSS.
9. Explain the following: i) factors in selection of discrete system simulation language ii) Benefits of simulation
10. Explain the simulation of a pure pursuit problem.

Computer Networks (342)

ASSIGNMENT – 1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Discuss the goals and application of computer networks.
2. What is ISDN? Explain.
3. Explain TDM with limitation of each type.
4. Explain the error correction mechanisms.
5. Explain the sliding window protocol.
6. State the differences between deterministic and adaptive routing. Also explain link state routing.
7. Explain the following: i) UDP ii) SNMP.
8. Explain the following i) DQDB ii) FDDI
9. Explain public key cryptography.
10. Differentiate between x.25 network and frame relay.

ASSIGNMENT – 2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Explain automatic repeat request protocol.
2. Differentiate 1-persistent and p-persistent ALOHA.
3. Discuss the congestion control policies.
4. Explain the OSI model.
5. What is switching? Discuss its various types.
6. What is framing? Explain the framing techniques.
7. State the differences between centralized and distributed routing. Also explain hierarchical routing.
8. Explain the following i) traffic shaping ii) load shedding.
9. Write short note on: i) FTP ii) WWW
10. Explain DNS.

Visual Programming with VB and VC++ (343)

Assignment-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is VB integrated development environment? Also explain the elements of IDE.
2. Explain the various arguments passing mechanisms.
3. Explain the control structures which are supported by VB.
4. How can we manage a form at runtime? Explain.
5. Explain the properties and methods used by a form.
6. How can we create our own DLL? Explain.
7. Explain the concept of object oriented programming in VB.
8. How many types of common dialog box are there? Describe in brief with proper examples.
9. Create an application that adds data control to a form and connects the data to the database.
10. What are active X components? Explain.

Assignment -2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

- Q1. How many types of projects are there in Visual Basic? Explain in brief about each of them.
- Q2. What is event driven programming? Also explain the events which are supported by VB.
- Q4. How do we declare a variable? Also explain the scope and lifetime of a variable.
- Q5 Explain the following i) Collection ii) function
- Q6. How can we manipulate menus at runtime? Explain.
- Q7. Explain the control arrays with help of program.
- Q8. Explain the process of creating an active X control.
- Q9. State the differences between activeX EXE and activeX DLL.
- Q10. Explain ADO control in detail.

Java Programming and Internet Applications (344)

Assingment-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. How Java is strongly associated with internet? What is the contribution of Java to World Wide Web?
2. Discuss the control structure supported by Java.
3. Explain the following: i) Chat & bulletin Board ii) USENET & NNTP
4. What is Hypertext Markup language? Describe its role in the implementation of java applets.
5. What is Package? How do we design a Package? Explain with examples.
6. What is the major difference between Interface & Class? Give an example where interface can be used to support multiple inheritance.
7. Develop a simple real life application program to illustrate the use of multithreads.
8. Describe the major task of input & output Stream Classes. Explain them with illustrations.
9. What is finally block? When & how is it used? Give a suitable example.
10. Explain Delegation Event Model.

ASSIGNMENT-2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Explain the following i) Byte Code ii) JIT
2. What is an exception? How exceptions are handled in Java?
3. How multiple threads can be created in Java?
4. How constructors can be overloaded in Java?
5. Explain the following: i) Creating & locating information on web ii) TELNET
6. Explain the message format & transfer.
7. What is a Package? How do we add a class or an interface to a package?
8. Discuss the various data types which are supported by Java.
9. Discuss the usage of final keyword.
10. How interfaces are implemented?

COMPUTER ARCHITECTURE AND PARALLEL PROCESSING (345)

ASSIGNMENT-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Explain the Computational Model.
2. What is parallelism? Explain the types and levels of Parallelism.
3. Explain the dependencies between the instructions.
4. Explain the cache coherence. Also discuss cache performance issues.
5. Explain the superscalar pipeline design structure and also explain data dependencies.
6. Explain the cache addressing models.
7. Explain the following: i) WAR Hazards ii) WAW Hazards iii) RAW Hazards
8. With nonlinear Pipeline, explain the reservation table and latency analysis.
9. Write a short note on VLIW Architecture.
10. What is the loop scheduling and global scheduling? Explain.

ASSIGNMENT-2

Attempt any five questions.

1. Explain the following: i) pipeline stealing ii) Basic block scheduling
2. Discuss the classification of parallel architectures.
3. What is paging? Explain.
4. Differentiate between i) paging and segmentation ii) Write Back and Write Through
5. Explain the Memory Replacement policies.
6. Write a short note on NUMA.
7. Explain the Crossbar and multistage Network.
8. Discuss the virtual memory models.
9. Explain the shared memory architecture.
10. Explain the snoopy cache protocol.

Data Mining & Data Warehousing (346)

ASSIGNMENT -1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

- Q1. Define inheritance. Explain its types.
- Q2. State the difference between generalization and specialization.
- Q3. Explain object relational model.
- Q4. What is distributed system? Explain replication and allocation techniques.
- Q5. What is multivalued dependency? Explain 4 NF.
- Q6. Describe data fragmentation with the help of suitable example.
- Q7. What is concurrency control? Explain one of the techniques.
- Q8. Explain the data modeling for data warehouse.
- Q9. Explain applications of data mining.
- Q10. Give an overview of active and spatial databases.

ASSIGNMENT -2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

- Q1. What is a constructor? Explain all types of constructor.
- Q2. What is runtime polymorphism? Explain in detail.
- Q3. What do you mean by join dependency? Explain BCNF.
- Q4. Explain client server architecture in detail.
- Q5. What is an association rule? Also explain any one of the data mining tools.
- Q6. Describe the difficulties in implementing databases.
- Q7. Explain i) a recovery technique ii) deductive databases
- Q8. Explain the functionality of data warehouse.
- Q9. Explain object relational model.
- Q10. Why concurrency control is needed?

Artificial Intelligence (347)

ASSIGNMENT 1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is AI? Explain its applications.
2. What is first-order predicate logic? Explain its syntax and semantics.
3. How problems are represented in AI?
4. How resolution can be used for proving theorems? Explain.
5. Explain the inference rules of first order predicate logic.
6. Which network representation schemes are used for knowledge representation?
7. What is knowledge acquisition? Explain the techniques & uses of KA.
8. How heuristic search is useful in AI? Explain hill climbing and also its limitations.
9. Explain MYCIN.
10. What is rule based system? Explain.

ASSIGNMENT 2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Why FOPL is used Instead of PL?
2. Write the algorithm for unification? Explain its use with example.
3. What is resolution? Explain its types.
4. Explain the structured representation schemes.
5. Explain the A* algorithm.
6. What is an Expert system? Explain its components.
7. What is production system? Explain its types.
8. What is the difference between depth first & depth first iterative depending search?
9. Discuss the types of learning.
10. Explain the characteristics of problems in AI.

Computer Graphics and Multimedia (348)

ASSIGNMENT 1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is computer graphics? Explain the applications of computer graphics.
2. What are the differences between raster scan and random scan monitors? Explain with working of each.
3. Explain i) plasma panel LED ii) LCD monitors.
4. Explain painter's algorithm.
5. Explain Bresenham's circle drawing algorithm with example.
6. Explain the following i) Scaling ii) Shear Transformation
7. Explain the clipping of a line using Sutherland-Cohen algorithm
8. Explain polar coordinates algorithm for generation of ellipse.
9. Explain the following: i) Gouraud shading ii) Phong shading
10. Explain CRT with diagram.

ASSIGNMENT 2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Explain the scan-line algorithm.
2. State the differences between interactive & passive graphics.
3. Explain: i) multimedia authoring tools ii) Gouraud shading
4. Explain the mid-point algorithm for drawing a circle.
5. What is projection? Explain different types of projection.
6. Explain the following: i) VGA ii) SVGA
7. Write a short note on zooming and panning with examples.
8. Explain the window to viewport transformation.
9. Explain i) Aspect Ratio ii) Polygon clipping
10. Explain the following i) Rotation ii) Reflection