

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

MCA-2nd/MSC-2nd Year

DISCRETE MATHEMATICAL STRUCTURE (231)

ASSIGNMENT-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. Consider an algebraic system $(G, *)$, where G is set of all non-zero real numbers and $*$ is binary operation defined by $a*b=ab/4$.
2. Show that any subgroup of acyclic group is cyclic.
3. Determine whether a semi group with more than one idempotent element can be a group
4. How Kruskal algorithm can be used to find minimum spanning tree? Explain
5. Explain Hamiltonian circuit and Euler Circuit with example.
6. When graphs are said to be isomorphic? Explain with example.
7. What is supremum and infimum? Explain
8. Explain linearly ordered and partially ordered set with example.
9. Discuss the application of Boolean algebra is switching theory.
10. Show that an integral domain that has finite number of elements is a field.

ASSIGNMENT-2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is COSET? Show that every sub-group Hof any abelian group G is normal.
2. Explain property of group and free semi group.
3. What are permutation groups? Explain.
4. Explain Chomsky Hierarchy of grammars.
5. Explain: i) Cut Point ii) Bridge iii) Homeomorphic graphs.
6. Explain prims algorithm using example and write the algorithm also.
7. Draw the unique binary tree for:
Inorder: 4 6 10 12 8 2 1 5 7 11 13 9 3
Post order: 12 10 8 6 4 2 13 11 9 7 5 3 1
8. What is lattice? When a lattice is said to be join-irreducible?
9. What is POSET? Explain its elements using example.
10. Explain the following: i) integral Domain ii) Field

MCA-2nd/MSC-2nd Year

Data Structure (232)

ASSIGNMENT 1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What do you mean by Data Structure? Explain types.
2. What is a sparse matrix? Explain.
3. Explain the pattern matching algorithms.
4. Write down the applications of stack. Explain Quicksort in details.
5. What is Dequeue? Explain.
6. What are two-way lists? Explain.
7. What is a B-tree? Explain insertion and deletion operation bubble soon of B-tree.
8. Write down a program for bubble sort and explain it.
9. Write down a program binary searching and explain it using example.

ASSIGNMENT 2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is need of data structure?
2. Explain various methods to store a string in memory.
3. Write down a program for Bubble sort and explain it using example.
4. Explain Header Linked lists.
5. How stacks are representing in memory? Explain.
6. What is a priority queue? Explain heap sort.
7. How Binary trees are represented in memory?
8. Differentiate BFS&DFS in graphs. Also use an example of each.
9. Write down a program for Insertion sort.
10. How collision is resolved? Explain

MCA-2nd/MSC-2nd Year

OBJECT ORIENTED METHODOLOGY USING C++ (233)

ASSIGNMENT-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

- Q1. What are the basic concepts of Object oriented programming?
- Q2. Write the importance of three aspects of Modeling.
- Q3. What is the difference between Friend and Member function. Define with example.
- Q4. Give the definition of constructor and explain the types of constructor.
- Q5. What is Inheritance and types of inheritance.
- Q6. Explain operator overloading with the help of program.
- Q7. How runtime polymorphism is achieved. Explain with the help of program.
- Q8. Define ADT, Multiple inheritance and Meta data.
- Q9. Explain Exception handling mechanisms.
- Q10. Short notes on: i) Templates ii) Static data members

ASSIGNMENT-2

Attempts do any five questions. All questions carry equal marks.

Max Marks: 15

- Q1. What is the difference between Procedure oriented and Object oriented programming.
- Q2. Give the ways of declaring and defining member functions in a class with the help of program.
- Q3. What is polymorphism and its types with program.
- Q4. What is impact of OOP on traditional s/w development approaches.
- Q5. Explain constructors and destructors with the help of program.
- Q6. What are virtual functions? Write a program to explain this concept.
- Q7. What is multiple inheritance and how it is achieved.
- Q8. What is templates how it is created explain with example.
- Q9. Write a program to create your own exception.
- Q10. Short notes: i) Aggregation ii) Static function

MCA-2nd/MSC-2nd Year
Software Engineering (234)

Assignment-1

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is Software Engineering? Is it an Art, Craft or a Science? Discuss.
2. List the reason for the “Software Crises”.
3. Discuss the significance and use of Requirement Engineering.
4. What are various activities during software project planning?
5. Describes Software Cost estimation.
6. Explain Software requirement specification in detail.
7. What is Software Design? Describe the difference between structured designs and object oriented design.
8. Define the module coupling and explain the different types of coupling.
9. Discuss the objectives of testing. What is Black box testing?
10. What is Software Reliability? What are the metric and specification of software reliability?

ASSIGNMENT-2

Attempt any five questions. All questions carry equal marks.

Max Marks: 15

1. What is the aim of Software Engineering? What does the discipline of Software Engineering discuss?
2. What is software crisis? Was Y2K a software crisis?
3. Explain the importance of requirements. How many types of requirements are possible and Why?
4. Describe any two software size estimation techniques.
5. Describe the various types of COCOMO Model.
6. What is software configuration management? Explain Quality assurance and project monitoring.
7. Discuss the objectives of software design.
8. Define the module Cohesion and explain different types of cohesion.
9. What is the purpose of integration testing? How is it done?
10. What is fault avoidance and tolerance? Define defensive programming.

