DATA STRUCTURE AND ALGORITHM

QUESTION BANK
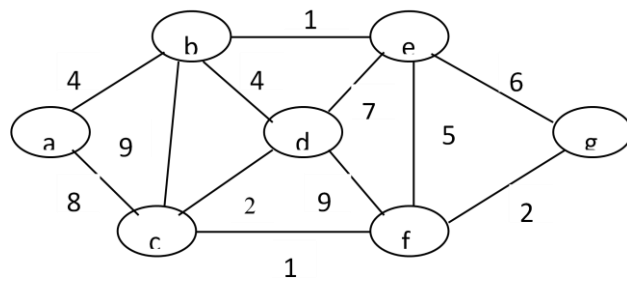
SECTION A	
UNIT	**QUESTIONS**
I	List out the types of Data structure with an example.
I	Infer about the analysis of algorithm.
I	What are common operations that can be performed on a Data Structure?
I	Classify the Characteristics of Arrays
I	Contract the Operations with arrays.
I	Explain about the Amortized Analysis?
II	Define the concept of stacks?
II	Sketch out an operation can be performed on stacks?
II	Write brief note on Post fix and prefix Expressions?
II	Evaluvate the expressions using stack.
II	What are the applications of stacks
II	Differentiate between stack and queue.
III	Define linked list. Classify it.
III	Write brief note on singly linked list.
III	Mention the advantages of Linked list.
III	How to insert a node in doubly linked list?
III	State any two applications of linked list.
III	Analyze the Circular linked list
IV	Define the concept of Bubble sort?
IV	Differentiate between Quick sort and Merge sort.
IV	Summarize the Traversal of a Binary Tree.
IV	Explain insertion sort?
IV	List out the operations on Binary tree.
IV	Illustrate the Binary search Trees.
V	Explain about the Representation of graph?
V	What are the applications of graph?
V	Summarize the Traversal in Graph.
V	Explain any three terminologies of Graph?
V	Define directed graph and undirected graph with example?
V	What is in-degree and out-degree of graph?

SECTION B		
UNIT	**QUESTIONS**	
I	Define data-structure and its types in detail.	

I	Construct a C program for two dimensinal array.
I	Summarize the One-dimensinal and Two-dimensinal Arrays
I	Classify the operations in Arrays
I	Demonstrate the Analysis of algorithms
I	Explain about the Multi-dimensonal arrays with Example.
II	Define Stack and represent its operations using algorithms.
II	Illustrate how to evaluate an expression.
II	Define Queue and represent its operations using algorithms.
II	Construct a C program to implement queue operation.
II	Explain applications of stack and queue.
II	Construct a C program to implement Stack operation.
III	Compare singly and doubly linked list.
III	Apply Stack in Linked list.
III	Describe an algorithm for adding a node in a singly linked list.
III	Apply Queue in Linked list.
III	Explain Applications of Linked list.
III	Apply the Circular Linked list with example.
IV	Illustrate the Inserting and Deleting in BST
IV	Explain about the Thread binary Tree.
IV	Demonstreate the Merge short with suitable example
IV	Differentiate between quick sort and merge sort.
IV	Write a short note on Quick sort
IV	What are th operations in the Binary Tree
V	Constract the Spanning Tree in Prim's Alogorithm.
V	What are the reprasentation of graph.
V	Explain about traversal in graph.
V	Write a short note on Krusal Alogorithm
V	Illustrate the Depth-first search with example.
V	Compare DFS with BFS.
V	Demonstrate the minimum spanning tree with example?

SECTION C	
UNIT	**QUESTIONS**
I	Demonstrate Amortized Analysis and Analysis of algorithm?
I	List out the dimensinal of Array and its operations.
I	Develop a C program for Matrix Multiplication?
II	Demonstrate Stack operations
II	Demonstrate Queue operations
II	Evaluation of Expressions: (A + B) * C - (D - E) * (F + G) convert into Infix, Prefix and Postfix Expressions
III	Applications of Doubly Linked Lists with the help of suitable example
III	Write an algorithm for insertion in a sorted linked list.

III	Explain Singly Linked List with example?	
IV	What are the three technique of binary traversal algorithm with example?	
IV	Demonstrate Merge sort with suitable example	
IV	Apply Quick sort algorithm on the given example 43,72,10,23,80,1,75,1,6	
V	Discuss about Prim's and Krushal's Alogorithm	
V	Apply Dijistra's Algorithm for shortest path problem	
V	Find the minimum cost spanning tree in given graphs using Kruskal's algorithms.	