

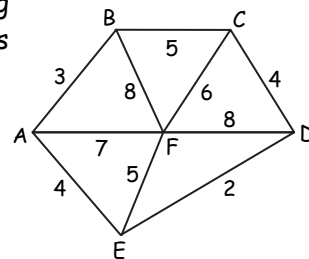
- N.B.:** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **three** out of remaining questions.
 (3) Assume suitable **data** if necessary.
 (4) **Figures to right** indicate **full marks**.

1. (a) Explain asymptotic notation with example. [5]
 (b) Explain expression tree? Give example. [5]
 (c) Define a graph. What are methods to represent a graph? [5]
 (d) Define minimum spanning tree. State techniques to compute minimum spanning tree. [5]

2. (a) Write a program to convert infix to postfix expression. [10]
 (b) Define a binary search tree and write algorithm to implement insertion and deletion. [10]

3. (a) Explain quick sort using an example. [10]
 (b) Define a Queue as ADT. Implement any two operation in it. [10]

4. (a) Draw a minimum cost spanning tree using Kruskal's algorithm. Also find its cost with its intermediate steps. [10]



- (b) Write a Pseudo Code/algorithm to insert a node in a linked list. [5]
 (c) Write a function to demonstrate depth first search. [5]

5. (a) Explain priority queue and give its complementation of the same? [10]
 (b) Construct a binary tree for the inorder and post-order traversal. [10]
 Inorder : "INFORMATION"
 Postorder : "INOFMAINOTR"

6. Write short notes on any **FOUR** : [20]
 (a) Euclid's algorithm (b) Radix Sort (c) Circular Linked List
 (d) Merge Sort (e) Searching algorithm (f) B-tree