MALINI KISHORE SANGHVI COLLEGE OF COMMERCE & ECONOMICS

CLASS: S.Y.B.Sc I.T (SEM III)

SUBJECT: DATA STRUCTURES   11/10/22

TIME: 2Hrs & 30 Min   Marks: 75

NOTE: ALL QUESTIONS ARE COMPUSORY
FIGURES TO THE RIGHT INDICATE FULL MARKS
EXPLAIN WITH ALGORITHM AND EXAMPLES

Q.1 ANSWER THE FOLLOWING (ANY THREE):   15 M

A) Describe Abstract data types
B) Explain the complexity of algorithm with help of example
C) Explain the Big Omega notation
D) Explain the column major order representation of 2-D array
E) Explain the merging of arrays
F) Explain the Binary search

Q.2 ANSWER THE FOLLOWING (ANY THREE):   15 M

A) Describe insertion in Linked List
B) Explain the merging of a two Linked List
C) Explain the creation of circular Linked List
D) Explain the memory de-allocation of Linked List
E) Explain the searching in a two way Linked List
F) Explain Header Linked List

Q.3 ANSWER THE FOLLOWING (ANY THREE):   15 M

A) Explain stack operations
B) Explain postfix notation
C) What is recursion, explain with help of example
D) Explain the array representation of Queue
E) Explain the application of Queues
F) What is Deque, explain its structure

Q.4 ANSWER THE FOLLOWING (ANY THREE):   15 M

A) Explain bubble sort
B) Explain merge sort
C) Explain the properties of binary tree
D) Explain the operations on binary search tree
E) Explain the Huffman's algorithm
F) Explain Red and black tree

Q.5 ANSWER THE FOLLOWING (ANY THREE):   15 M

A) Explain the division remainder method
B) Explain the folding method
C) Explain the quadratic probing
D) Explain Link representation of graph
E) Explain the spanning tree
F) Explain the chaining method

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