

Q.1 Select any one option from the following questions.

1. Which of the following standard algorithms is not a Greedy algorithm?

CO2

- a) Dijkstra's shortest path algorithm b) Prim's algorithm c) Kruskal algorithm d) Huffman Coding e) Bellman Ford Shortest path algorithm

CO2

2. The 0-1 Knapsack problem can be solved using Greedy algorithm.

- a) True b) False

CO3

3. Time required to merge two sorted lists of size m and n, is

- a) $O(m \mid n)$ b) $O(m + n)$ c) $O(n \log n)$ d) $O(n \log m)$

CO3

4. What is the worst-case time for binary search finding a single item in an array?

- a) Linear time b) Quadratic time c) Logarithmic time d) constant time

CO3

5. What is the worst-case time for quick sort to an array of n elements?

- a) $O(\log n)$ b) $O(n \log n)$ c) $O(n)$ d) $O(n^2)$

CO2

6. Which of the following is/are the operations performed by Kruskal's algorithm.

- i) sort the edges of G in increasing order by length ii) keep a subgraph S of G initially empty iii) builds a tree one vertex at a time

- a) i, and ii only b) ii and iii only c) i and iii only d) All i, ii and iii

Q.2 Solve Any Two of the following.

3 X 2

(A) Write an algorithm for knapsack problem using greedy method. What is its time complexity?

CO1

(B) Explain quick sort with respect to its:

CO2

- (a) Best case behavior

- (b) Worst case behavior

- (c) What is the time complexity of it?

CO3

(C) Sort the following no. using merge sort: 10, 50, 87, 73, 64, 92, 23, 34, 54, 18, 36.

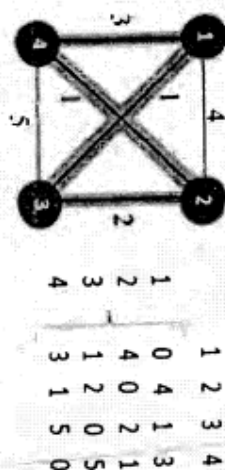
Q.3 Solve Any One of the following.

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(A) We want to merge some sorted files where the no. of records are: {12, 34, 56, 73, 24, 11, 34, 56, 78, 91, 34, 91, 62} what is optimal way to merge them?

CO3

(B) Solve the travelling salesmen problem for the graph given below, adjacency matrix for the graph is



*** End ***

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