GeeksQuiz

Computer science mock tests for geeks

Greedy Algorithms

Question 1

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

A Dijkstra's shortest path algorithm

B Prim's algorithm

C Kruskal algorithm

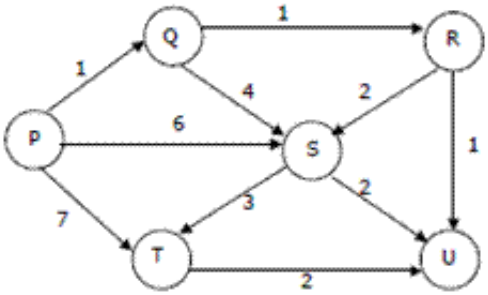
D Huffman Coding

E Bellmen Ford Shortest path algorithm

Discuss it

Question 2

Suppose we run Dijkstra’s single source shortest-path algorithm on the following edge weighted directed graph with vertex P as the source. In what order do the nodes get included into the set of vertices for which the shortest path distances are finalized? (GATE CS 2004)



A P, Q, R, S, T, U

B P, Q, R, U, S, T

C P, Q, R, U, T, S

D P, Q, T, R, U, S

Discuss it

Question 3

A networking company uses a compression technique to encode the message before transmitting over the network. Suppose the message contains the following characters with their frequency:

character	Frequency
a	5
b	9
c	12
d	13
e	16
f	45

If the compression technique used is Huffman Coding, how many bits will be saved in the message?

A 224

B 800

C 576

D 324

Discuss it

Question 4

What is the time complexity of Huffman Coding?

A O(N)

B O(NlogN)

C O(N(logN)^2)

D O(N^2)

Discuss it

Question 5

In question #2, which of the following represents the word *"dead"*?

A 1011111100101

B 0100000011010

C Both A and B

D None of these

Discuss it

Question 6

Which of the following is true about Kruskal and Prim MST algorithms? Assume that Prim is implemented for adjacency list representation using Binary Heap and Kruskal is implemented using union by rank.

A Worst case time complexity of both algorithms is same.

B Worst case time complexity of Kruskal is better than Prim

C Worst case time complexity of Prim is better than Kruskal

Discuss it

Question 7

Which of the following is true about Huffman Coding.

A Huffman coding may become lossy in some cases

B Huffman Codes may not be optimal lossless codes in some cases

C In Huffman coding, no code is prefix of any other code.

D All of the above

Discuss it

Question 8

Suppose the letters a, b, c, d, e, f have probabilities 1/2, 1/4, 1/8, 1/16, 1/32, 1/32 respectively. Which of the following is the Huffman code for the letter a, b, c, d, e, f?

A 0, 10, 110, 1110, 11110, 11111

B 11, 10, 011, 010, 001, 000

C 11, 10, 01, 001, 0001, 0000

D 110, 100, 010, 000, 001, 111

Discuss it

Question 9

Suppose the letters a, b, c, d, e, f have probabilities 1/2, 1/4, 1/8, 1/16, 1/32, 1/32 respectively.
What is the average length of Huffman codes?

A 3

B 2.1875

C 2.25

D 1.19375

Discuss it

There are 9 questions to complete.