Started on	Friday, 12 July 2024, 5:11 AM
State	Finished
Completed on	Friday, 12 July 2024, 5:26 AM
Time taken	14 mins 42 secs
Marks	15.00/16.00
Grade	**93.75** out of 100.00

Question 1

Correct

Mark 1.00 out of 1.00

What will be the Big-Oh complexity of a linear search?

Select one:

- a. O(n) ✔
- b. O(1)
- c. $O(n^2)$
- d. $O(2^n)$

The correct answer is: O(n)

Question 2

Correct

Mark 1.00 out of 1.00

If the characters 'D', 'C', 'B', 'A' are placed in a queue (in that order), and then removed one at a time, in what order will they be removed?

Select one:

- a. ABCD
- b. ABDC
- c. DCAB
- d. DCBA ✔
- e. ACDB

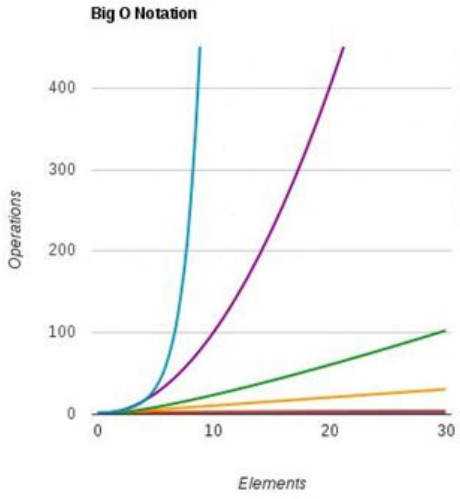
The correct answer is: DCBA

Question 3

Incorrect

Mark 0.00 out of 1.00

What is the big-o complexity of the red line?



Select one:

- a. O(n)
- b. O(log n) ✖
- c. $O(n^2)$
- d. O(1)

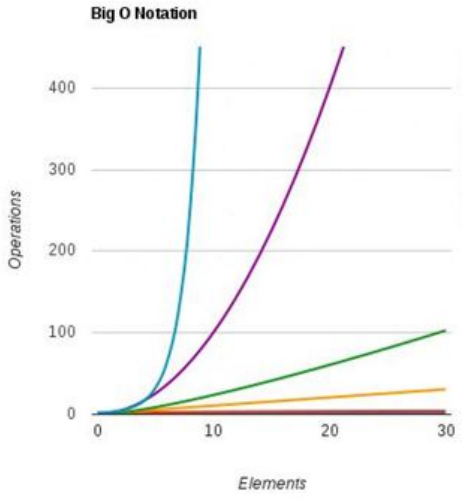
The correct answer is: O(1)

Question 4

Correct

Mark 1.00 out of 1.00

What is the big-o complexity of the blue line?



Select one:

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

The correct answer is: $O(2^n)$

Question 5

Correct

Mark 1.00 out of 1.00

Which method of traversal does not use stack to hold nodes that are waiting to be processed?

Select one:

- a. Depth First
- b. Breadth first ✔
- c. Back-tracking
- d. Bounding

The correct answer is: Breadth first

Question 6

Correct

Mark 1.00 out of 1.00

What will be the Big-Oh complexity to traverse a linked list?

Select one:

- a. O(n) ✔
- b. O(1)
- c. $O(n^2)$
- d. $O(2^n)$

The correct answer is: O(n)

Question 7

Correct

Mark 1.00 out of 1.00

True/False: Dijkstra's algorithm finds the shortest paths in a graph from all vertices to a given vertex.

Select one:

- True
- False ✔

The correct answer is 'False'.

Question 8

Correct

Mark 1.00 out of 1.00

What is the big-o complexity of the purple line?

Select one:

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

The correct answer is: $O(n^2)$

Question 9

Correct

Mark 1.00 out of 1.00

What will be the Big-Oh complexity to search a balanced binary tree?

Select one:

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

The correct answer is: O(log n)

Question 10

Correct

Mark 1.00 out of 1.00

_____ is the time complexity of an algorithm that operates in exponential time. This means that process times doubles with the addition of each data element.

Select one:

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

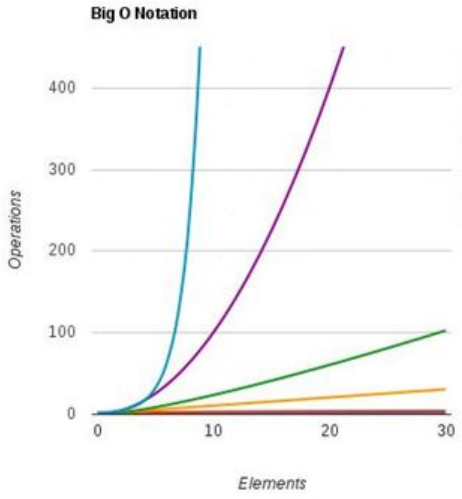
The correct answer is: $O(2^n)$

Question 11

Correct

Mark 1.00 out of 1.00

What is the big-o complexity of the green line?



Select one:

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

The correct answer is: O(n log n)

Question 12

Correct

Mark 1.00 out of 1.00

What is the Big-Oh complexity of the selection sort?

Select one:

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

The correct answer is: $O(n^2)$

Question 13

Correct

Mark 1.00 out of 1.00

True/False: O(1) is the time complexity of an algorithm that operates in constant time. The process time required stays constant regardless of the data size.

Select one:

- True ✔
- False

The correct answer is 'True'.

Question 14

Correct

Mark 1.00 out of 1.00

Breadth first search _____.

Select one:

- a. Scans each incident node along with its children.
- b. Scans all incident edges before moving to other node. ✔
- c. Is same as backtracking.
- d. Scans all the nodes in random order.
- e. Scans all the nodes in pre-order manner.

The correct answer is: Scans all incident edges before moving to other node.

Question 15

Correct

Mark 1.00 out of 1.00

____ is the time complexity of an algorithm that operates in linear time. The process time changes in the same ratio as the data size.

Select one:

- a. O(n) ✔
- b. O(1)
- c. $O(n^2)$
- d. $O(2^n)$

n

The correct answer is: O(n)

Question 16

Correct

Mark 1.00 out of 1.00

Suppose you have a directed graph representing all the flights that an airline flies and the flying times for each connection. What algorithm might be used to find the best sequence of connections from one city to another to minimize the overall time of the flight?

Select one:

- a. Breadth first search.
- b. Depth first search.
- c. A cycle-finding algorithm.
- d. A shortest-path algorithm. ✔

The correct answer is: A shortest-path algorithm.