Final Exam

Question 1

1/1 point (graded)

1. The sort algorithm that is based on the idea of finding the minimum or maximum element in an unsorted array is called?

- Merge sort
- Bubble sort
- Selection sort ✔
- Quick sort
- Insertion sort

Answer

Correct: Correct, the Selection sort algorithm is one of the simplest sorting algorithm

Submit You have used 2 of 3 attempts

Question 2

0/1 point (graded)

2. Which sort algorithm makes use of the insertion sort and merge sort?

- Timsort

- Bubble sort
- Quick sort
- Selection sort
- Insertion sort ✖

Answer
Incorrect: Incorrect, try again

Submit You have used 3 of 3 attempts

Question 3

1/1 point (graded)
3. Insertion sorts provide several advantages. Which of the following are the main advantages?

- Makes use of other sorts
- Useful for large data sets and Timsorts
- Simple implementation, efficient for small data sets and memory efficient ✔
- Efficient use of Quick sorts, merge sorts and memory efficient
- Momory efficient, makes use of Bubble sorts and simple to implement

Answer
Correct: Correct

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Question 4

1/1 point (graded)

4. There are basically two main types of search algorithms. These are called:

Note: Make sure you select all of the correct options—there may be more than one!

- [ ] Merge Search
- [x] Sequential Search
- [ ] Linear Search
- [x] Interval Search
- [ ] Bubble Search

✔

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Question 5

1/1 point (graded)

5. Which type of search algorithm is considered to be the most efficient?

- (•) Interval Search ✔
- ( ) Sequential Search
- ( ) Geometric Search
- ( ) Graphing Search

Answer

Correct:
Correct, Interval search algorithms are more efficient than sequential search algorithms because the Interval search breaks an array into smaller parts to be searched.

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Question 6

1/1 point (graded)

6. Linear or Sequential search algorithms...

- sort data first before searching.
- need data to be sorted before searching.
- examine each element in the array in sequence, working from the beginning of the array to the end in a linear fashion. ✔
- compares the target value to the value of the item at the mid-point of the array.

Answer

Correct:
Correct, Linear or Sequential search algorithms examine each element in the array in sequence, working from the beginning of the array to the end in a linear fashion.

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Question 7

1/1 point (graded)

7. Interval search algorithms ...

- uses data from multiple datasets to find the correct answer.
- must use a simple binary approach for the search.

- does not compares the target value to the value of the item at the mid-point of the array.
- break the array into smaller parts to be searched. ✔

Answer
Correct:
Correct, Interval algorithms are more efficient than sequential search algorithms, but they need data to be sorted before searching.

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Question 8

1/1 point (graded)
8. Another name for Combinatorial Computational Geometry is,

- Map geometry
- Algorithmic Geometry ✔
- CAD/CAM geometry.
- Modeling geometry.

Answer
Correct:
Correct, the primary goal in combinatorial computational geometry is to develop efficient algorithms and data structures for solving problems in terms of basic geometrical objects such as circles, triangles and polygons.

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Question 9

1/1 point (graded)

Note: Make sure you select all of the correct options—there may be more than one!

9. Geometric algorithms can be used for which of these tasks?

- [x] Building topographical maps
- [x] Computer-aided design and manufacturing
- [x] Construction
- [x] Pyramid building
- [x] Aerospace design

✔

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Question 10

1/1 point (graded)

10. AI application for Geometric algorithms include:

- ○ Planning and collision avoidance for robots in motion; planning the best path around a complicated obstacle.
- ○ Defining airspace with geographic information systems to resolve airspace issues, and direct search and rescue efforts.
- ○ Studying biochemistry and virology to advance medical research and treatments.
- ◉ All of the above ✔

Answer

Correct: Correct, all of these applications make use of geometric and graphing algorithms.

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