

ADS_Midquiz-4

1. Which of the following best describes the useful criterion for comparing the efficiency of algorithms? 1 point
- ☐ a) Time
 - ☐ b) Memory
 - ☒ c) Both of the above
 - ☐ d) None of the above
2. Arrays are best data structures 1 point
- ☒ a) for relatively permanent collections of data
 - ☐ b) for the size of the structure and the data in the structure are constantly changing
 - ☐ c) for both of above situation
 - ☐ d) for none of above situation
3. Quick sort is also known as 1 point
- ☐ a) merge sort
 - ☐ b) tree sort
 - ☐ c) shell sort
 - ☒ d) partition and exchange sort
4. Which searching can be performed recursively? 1 point
- ☐ a) Linear search
 - ☒ b) Binary search
 - ☐ c) Both
 - ☐ d) None
5. What is the output of the following Java code? 1 point

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```
public class array
{
    public static void main(String args[])
    {
        int []arr = {1,2,3,4,5};
        System.out.println(arr[2]);
        System.out.println(arr[4]);
    }
}
```

- ☒ a) 3 and 5
- ☐ b) 5 and 3
- ☐ c) 2 and 4
- ☐ d) 4 and 2

6. User defined data type is also called?

1 point

- ☐ a) Primitive
- ☒ b) Non-primitive
- ☐ c) Identifier
- ☐ d) None of these

7. What's happen if base condition is not defined in recursion ?

1 point

- ☐ a) Stack underflow
- ☒ b) Stack Overflow
- ☐ c) None of these
- ☐ d) Both a and b

8. The way in which data items are logically related or stored is called

1 point

- ☐ a) data items
- ☐ b) data storage
- ☐ c) storage structure
- ☒ d) data structure

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9. Which of the following is not a disadvantage to the usage of array? 1 point
- ☐ a) Fixed size
 - ☐ b) There are chances of wastage of memory space if elements inserted in an array are lesser than the allocated size
 - ☒ c) Accessing elements at specified positions
 - ☐ d) Insertion based on position
10. What is advantage of bubble sort in comparison to other sorting techniques 1 point
- ☐ a) faster
 - ☐ b) Consumes less Memory
 - ☒ c) Detects whether the input is already sorted
 - ☐ d) All of the options
11. Which of the following is not a limitation of binary search algorithm? 1 point
- ☐ A. must use a sorted array
 - ☐ B. requirement of sorted array is expensive when a lot of insertion and deletions are needed
 - ☐ C. there must be a mechanism to access middle element directly
 - ☒ D. binary search algorithm is not efficient when the data elements more than 1500.
12. Which of the following is a disadvantage of linear search? 1 point
- ☐ A. Requires more space
 - ☒ B. Greater time complexities compared to other searching algorithms
 - ☐ C. Not easy to understand
 - ☐ D. Not easy to implement
13. Consider an array [1,3,2,4] how many iterations are needed to sort the elements using selection sort 1 point

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☒ a) 1

☐ b) 2

☐ c) 3

☐ d) 4

14. The time complexity of quicksort is

1 point

☐ a) $O(n)$

☐ b) $O(\log n)$

☒ c) $O(n^2)$

☐ d) $O(n \log n)$

15. `int func(int a, int b){`

1 point

`if(b==0)`

`return 0;`

`if(b==1)`

`return a;`

`return a + func(a,b-1);`

`}`

what will be the output of `func(3,8)` .

☐ a) 11

☒ b) 24

☐ c) 22

☐ d) 21

16. Recursion is similar to which of the following?

1 point

☐ a) Switch Case

☒ b) Loop

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☐ c) If-else

☐ d) None

17. Recursion uses more memory compared to iteration.

1 point

☒ a) True

☐ b) False

☐ c) Both

☐ d) None of the above

18. Which Data Structure is mainly used for implementing the recursive algorithm?

1 point

☐ a) Queue

☒ b) Stack

☐ c) Linked List

☐ D) Tree

19. Which sorting techniques is least dependent on initial ordering of array

1 point

☐ a) Quick sort

☐ b) Bubble sort

☒ c) Merge sort

☐ d) Insertion sort

20. The smallest element of an array's index is called its

1 point

☒ a) A lower bound.

☐ b) upper bound.

☐ c) range.

☐ d) extraction

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