

ADS CCEE Practice Quiz 1

Total points 28/40 ?

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0 of 0 points

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MCQ

28 of 40 points



✗ What will the following code do? *

0/1

```
Node head = new Node(10);  
head.next = new Node(20);  
head.next.next = new Node(30);  
head = head.next;  
System.out.println(head.data);
```

- ☒ A) 10
- ☐ B) 20
- ☐ C) 30
- ☐ D) NullPointerException

✗

Correct answer

- ☒ B) 20

✗ What is the **default initial capacity** of an ArrayList in Java? *

0/1

- ☐ 0
- ☒ 16
- ☐ 10
- ☐ 5

✗

Correct answer

- ☒ 10

✓ Which keyword is used to **explicitly throw an exception**? * 1/1

- ☐ A) try
- ☐ B) catch
- ☒ C) throw
- ☐ D) throws



✓ class Node { * 1/1

```
    int data;  
    Node next;  
    Node(int d) { data = d; }  
}  
public class Test {  
    public static void main(String[] args) {  
        Node head = new Node(10);  
        head.next = new Node(20);  
        Node newHead = new Node(5);  
        newHead.next = head;  
        head = newHead;  
        System.out.println(head.data);  
    }  
}
```

- ☐ A) 10
- ☒ B) 5
- ☐ C) 20
- ☐ D) NullPointerException



✗ What is the **default initial capacity** of a HashMap? *

0/1

- ☐ A) 8
- ☒ B) 10
- ☐ C) 16
- ☐ D) 32

✗

Correct answer

- ☒ C) 16

✓ Which of the following is the correct way to declare a multidimensional array in Java?

*1/1

- ☐ int[] arr;
- ☐ int arr[[]];
- ☒ int[][] arr;
- ☐ int[[]] arr;

✓

✓ Which of these data types is used by operating system to manage the Recursion in Java?

*1/1

- ☐ Array
- ☐ LinkedList
- ☒ Stack
- ☐ Queue

✓

✓ public class Main{ *

```
    public static void main(String[] args) {  
        int[][] arr = new int[2][];  
        arr[0] = new int[]{1,2,3};  
        arr[1] = new int[]{4,5};  
        System.out.println(arr[1][2]);  
    }  
}
```

1/1

- ☐ A) 0
- ☐ B) 5
- ☒ C) ArrayIndexOutOfBoundsException
- ☐ D) Compilation error



✗ import java.util.*; *

```
public class Test {  
    public static void main(String[] args) {  
        HashMap<Integer, String> map = new HashMap<>();  
        map.put(1, "A");  
        map.put(2, "B");  
        map.put(1, "C");  
        System.out.println(map.get(1));  
    }  
}
```

0/1

- ☒ A
- ☐ C
- ☐ Error
- ☐ Null

✗

Correct answer

- ☒ C

✗ import java.util.*; *

```
public class Test {  
    public static void main(String[] args) {  
        ArrayList<Integer> list = new ArrayList<>();  
        list.add(1);  
        list.add(2);  
        list.add(3);  
        list.remove(1);  
        System.out.println(list);  
    }  
}
```

0/1

- ☐ A) [1, 2, 3]
- ☐ B) [1, 3]
- ☒ C) [2, 3]
- ☐ D) Compilation error

✗

Correct answer

- ☒ B) [1, 3]

✗ import java.util.*; * 0/1

```
public class Test {  
    public static void main(String[] args) {  
        HashMap<Integer, String> map = new HashMap<>();  
        map.put(null, "A");  
        map.put(null, "B");  
        System.out.println(map.size());  
        System.out.println(map.get(null));  
    }  
}
```

- ☐ A) 2 and A
- ☐ B) 1 and B
- ☐ C) 2 and B
- ☒ D) Compilation error ✗

Correct answer

- ☒ B) 1 and B

✗ Elements in an array are accessed _____ * 0/1

- ☐ Randomly
- ☒ Sequentially ✗
- ☐ exponentially
- ☐ logarithmically

Correct answer

- ☒ Randomly

✓ What will this code print? *

1/1

```
int[] arr = {2, 4, 6, 8, 10};
int key = 8;
int index = -1;

for (int i = 0; i < arr.length; i++) {
    if (arr[i] == key) {
        index = i;
        break;
    }
}
System.out.println(index);
```

- ☐ A) 2
- ☒ B) 3
- ☐ C) 4
- ☐ D) -1

✓

✓ Which of the following statements about arrays in Java is **false**? *

1/1

- ☐ A) Arrays are objects.
- ☒ B) Array size can be changed after creation.
- ☐ C) An array can store primitive or objects.
- ☐ D) Arrays have a length property.

✓

✓ A linear collection of data elements where the linear node is given by means of pointer is called? *1/1

- ☐ Queue
- ☐ Stack
- ☐ Array
- ☒ LinkedList



✓ What is the **time complexity** of inserting a node at the **beginning** of a singly linked list? *1/1

- ☒ A) $O(1)$
- ☐ B) $O(n)$
- ☐ C) $O(\log n)$
- ☐ D) $O(n \log n)$



✓ Which Java interface provides the root of the **collection hierarchy**? * 1/1

- ☒ A) Iterable
- ☐ B) Collection
- ☐ C) List
- ☐ D) Map



✗ The optimal data structure used to solve Tower of Hanoi is _____ * 0/1

- ☐ Tree
- ☐ Heap
- ☒ Priority queue
- ☐ Stack

✗

Correct answer

- ☒ Stack

✓ Which collection guarantees that elements are **sorted in natural order**? * 1/1

- ☐ A) HashSet
- ☐ B) LinkedHashSet
- ☒ C) TreeSet
- ☐ D) PriorityQueue

✓

✓ What is the output of the following code? *

1/1

```
int[] arr = {11, 22, 33, 44, 55};  
int key = 100;  
int index = -1;  
  
for (int i = 0; i < arr.length; i++) {  
    if (arr[i] == key) {  
        index = i;  
    }  
}  
System.out.println(index);
```

- ☐ 100
- ☐ 4
- ☒ -1
- ☐ Key Not Found



✗ Which of the following is **true**? *

0/1

- ☐ OptionA) Linear search is faster for small datasets.
- ☒ B) Binary search is better for large, sorted datasets.
- ☐ C) Binary search requires random access.
- ☐ D) All of the above. 1



Correct answer

- ☒ D) All of the above. 1



✗ import java.util.*; *

```
public class Test {  
    public static void main(String[] args) {  
        int[] arr = {1, 2, 3, 4};  
        int[] arr2 = arr;  
        arr2[1] = 99;  
        System.out.println(arr[1]);  
    }  
}
```

0/1

- ☐ 1
- ☒ 2
- ☐ 99
- ☐ Compiletime Error

✗

Correct answer

- ☒ 99

✓ What is the **load factor** of a HashMap by default? *

1/1

- ☐ A) 0.5
- ☐ B) 0.65
- ☒ C) 0.75
- ☐ D) 1.0

✓

✓ What is output of the following code? *

1/1

```
public class Demo1 {  
    static int sumDown(int n) {  
        if (n == 0) return 0;  
        return n + sumDown(n);  
    }  
    public static void main(String[] args) {  
        System.out.println(sumDown(5));  
    }  
}
```

- ☐ 25
- ☐ 20
- ☐ 5
- ☒ StackOverflowError



✓ What is the output of the following code? *

1/1

```
public class Test {  
    public static void main(String[] args) {  
        int[] arr = {10, 20, 30, 40};  
        for (int i = 0; i < arr.length; i++) {  
            arr[i] = arr[i] + i;  
        }  
        System.out.println(arr[2]);  
    }  
}
```

- ☐ 30
- ☐ 21
- ☐ 31
- ☒ 32



✓ Which of the following operations is **not efficient in an ArrayList** compared to a LinkedList?

*1/1

- ☐ A) Random access by index
- ☐ B) Iterating through elements
- ☒ C) Inserting/removing in the middle
- ☐ D) Accessing the first element



✓ Which of the following is true about HashMap in Java? *

1/1

- ☐ A) It allows one null key and multiple null values.
- ☐ B) It doesn't maintain any order of keys.
- ☐ C) Key lookups are average $O(1)$.
- ☒ D) All of the above



✓ Which of the following methods actually exists in ArrayList to check if an element is present? *1/1

- ☐ A) has()
- ☒ B) contains()
- ☐ C) exists()
- ☐ D) search()



✓ Binary Search can be categorized into which of the following? *

1/1

- ☐ Greedy algorithm
- ☐ Dynamic programming
- ☐ Brute Force technique
- ☒ Divide and conquer



✓ Which of the following is **NOT true** about recursion in Java? * 1/1

- ☐ A) Every recursive function must have a base case.
- ☐ B) Recursion can lead to StackOverflowError if base case is missing.
- ☒ C) Recursion always executes faster than iteration. ✓
- ☐ D) Recursion can call itself with smaller sub-problems.

✓ What is the output of the following code snippet? * 1/1

```
public class Test {  
    static int fun(int n) {  
        if (n == 0) return 0;  
        return n + fun(n - 1);  
    }  
  
    public static void main(String[] args) {  
        System.out.println(fun(4));  
    }  
}
```

- ☐ 4
- ☐ 0
- ☒ 10 ✓
- ☐ Comliation error

✓ Which of the following conditions must be true for **Binary Search** to work *1/1 correctly?

- ☒ A) Array must be sorted
- ☐ B) Array must contain only integers
- ☐ C) Array size must be a power of 2
- ☐ D) Array must not contain duplicates



✗ import java.util.*; *
public class Test {
 public static void main(String[] args) {
 ArrayList list = new ArrayList();
 list.add("Java");
 list.add(100);
 System.out.println(list.get(1));
 }
}

0/1

- ☐ A) Java
- ☐ B) 100
- ☒ C) Compilation error
- ☐ D) ClassCastException



Correct answer

- ☒ B) 100

✓ import java.util.*; * 1/1

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

- ☐ 4
- ☒ 2 ✓
- ☐ 3
- ☐ Undefined

✓ Which of the following statements about singly linked list is **false**? * 1/1

- ☐ A) Traversal is possible only in one direction.
- ☒ B) Random access by index is $O(1)$. ✓
- ☐ C) Insertion at head is $O(1)$.
- ☐ D) Deletion at a given key may require traversal.

✓ What is the output of following code *

1/1

```
class Fun1
{
    public static void main(String abc[])
    {
        int arr[] ={10,20,30,40,50};
        System.out.println(arr[5]);
    }
}
```

- ☐ 50
- ☐ Compile time error
- ☒ ArrayIndexOutOfBoundsException
- ☐ Stack overflow



✗ The array is as follows: 1,2,3,6,8,10. Given that the number 17 is to be searched. At which call it tells that there is no such element?(By using linear search(recursive) algorithm)

*0/1

- ☐ 5th Call
- ☐ 17th Call
- ☐ 7th Call
- ☒ The function call itself infinite time



Correct answer

- ☒ 7th Call

✓ Which statement about ArrayList resizing is correct? *

1/1

- ☒ A) It doubles its capacity every time it runs out of space.
- ☐ B) It increases by 1 element each time.
- ☐ C) It triples its capacity.
- ☐ D) It stays fixed.



✓ Which of the following is the **parent class of all exceptions** in Java? *

1/1

- ☒ A) Throwable
- ☐ B) Exception
- ☐ C) RuntimeException
- ☐ D) Error



✓ What will be the output of the following code? *

1/1

```
public class Test {  
    public static void main(String[] args) {  
        int[] arr = new int[5];  
        System.out.println(arr[2]);  
    }  
}
```

- ☒ A) 0
- ☐ B) Garbage value
- ☐ C) Compilation error
- ☐ D) ArrayIndexOutOfBoundsException



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