

ADS CCEE Practice Quiz 2

Total points 13/20 ?

✓ Which of the following is the disadvantage of the array? * 1/1

- ☐ Stack and Queue data structures can be implemented through an array.
- ☐ Index of the first element in an array can be negative
- ☒ Wastage of memory if the elements inserted in an array are lesser than the allocated size ✓
- ☐ Elements can be accessed sequentially.

✗ What is the output of the following recursive function call? * 0/1

```
public class Main
{
    int sumDigits(int n) {
        if (n == 0) {
            return 0;
        }
        return n % 10 + sumDigits(n / 10);
    }

    public static void main(String[] args) {
        System.out.println(sumDigits(1234));
    }
}
```

- ☐ a) No output
- ☒ b) 10 ✗
- ☐ c) 11
- ☐ d) Compilation Error

Correct answer

- ☒ d) Compilation Error

✓ Java uses ___ type of memory to implement Recursion. * 1/1

- ☐ a) Heap
- ☒ b) Stack ✓
- ☐ c) Register
- ☐ d) None

✓ Which of the following is the infix expression? * 1/1

- ☒ A+B*C ✓
- ☐ +A*BC
- ☐ ABC+*
- ☐ None of the above

✓ What is tail recursion? * 1/1

- ☒ a) A type of recursion where the function calls itself at the end of each recursive call ✓
- ☐ b) A type of recursion where the function calls itself at the beginning of each recursive call
- ☐ c) A type of recursion where the function does not call itself
- ☐ d) A type of recursion where the function uses a loop instead of recursion

✗ What will be the output of the program? *

0/1

```
class Exam{
    public static void main(String abc[] ){
        int x =10;
        int y= 15;

        if(x++ >10 && --y>10){

        }
        System.out.print(x+","+y);
        if(x++>10 && --y>10){
        }
        System.out.print(x+","+y);
    }
}
```

- ☐ 11,15 11,14
- ☐ 11,15 12,14
- ☒ 10,15 12,14
- ☐ 11,14 11,15

Correct answer

- ☒ 11,15 12,14

✗ The postfix form of the expression $(A+B)*(C*D-E)*F / G$ is? *

0/1

- ☐ $AB+CD*E - FG /**$
- ☒ $AB + CD* E - F **G /$
- ☐ $AB + CD* E - *F *G /$
- ☐ $AB + CDE * - * F *G /$

Correct answer

- ☒ $AB + CD* E - *F *G /$

✓ What is recursion? *

1/1

- ☐ a) A loop that executes until a condition is met
- ☒ b) A function that calls itself
- ☐ c) A data structure that holds a collection of elements
- ☐ d) An algorithm that sorts data in ascending order

✓ Which of the following is not a real-life example of a Queue? *

1/1

- ☐ Waiting in line to order food at a restaurant
- ☐ Waiting in line to buy movie tickets
- ☐ Managing tasks on a CPU
- ☒ Using a stack of dishes

✓ What is the time complexity for accessing an element in an array? *

1/1

- ☐ $O(n^2)$
- ☐ $O(\log n)$
- ☒ $O(1)$
- ☐ $O(n)$

✗ What is the output of the following recursive function call? *

0/1

```
public class Main
{
    static void printString(String str) {
        if (str.length() == 0) {
            return;
        }
        printString(str.substring(1));
        System.out.print(str.charAt(0) + " ");
    }

    public static void main(String[] args) {
        printString("hello");
    }
}
```

- ☒ a) h e l l o ✗
- ☐ b) o l l e h
- ☐ c) h l l o e
- ☐ d) Compilation Error

Correct answer

- ☒ b) o l l e h

Centre: *

- ☒ Kharghar
- ☐ Juhu

✓ What is the base case in recursion? *

1/1

- ☐ a) The case where the recursion starts
- ☒ b) The case where the recursion ends ✓
- ☐ c) The case where the recursion reaches its maximum depth
- ☐ d) The case where the recursion encounters an error

✗ What is the output of the following recursive function call? *

0/1

```
public class Main
{
    static void printBinary(int n) {
        if (n > 1) {
            printBinary(n / 2);
        }
        System.out.print(n % 2);
    }

    public static void main(String[] args) {
        printBinary(13);
    }
}
```

- ☐ a) 1101
- ☒ b) 1011 ✗
- ☐ c) 0110
- ☐ d) Compilation Error

Correct answer

- ☒ a) 1101

✓ public class Main *
{
 static int power(int base, int exponent) {

1/1

```

        if (exponent == 0) {
            return 1;
        }
        return base * power(base, exponent - 1);
    }

    public static void main(String[] args) {
        System.out.println(power(5, 4));
    }
}

```

- ☐ a) Compilation Error
- ☐ b) 225
- ☒ c) 625 ✓
- ☐ d) 125

✗ What is the output of the following recursive function call? *

0/1

```

public class Main
{
    static int factorial(int n) {
        if (n == 0) {
            return 1;
        }
        return n * factorial(n - 1);
    }

    public static void main(String[] args) {
        factorial(5);
    }
}

```

- ☐ a) Compilation Error
- ☐ b) 60
- ☒ c) 120 ✗
- ☐ d) No Output

Correct answer

- ☒ d) No Output

✓ Consider the usual algorithm for determining whether a sequence of parentheses is balanced. Suppose that you run the algorithm on a sequence that contains 2 left parentheses and 3 right parentheses (in some order). The maximum number of parentheses that appear on the stack AT ANY ONE TIME during the computation?

*1/1

- ☐ 1
- ☒ 2 ✓
- ☐ 3
- ☐ 4 or more

Name: *

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✓ Consider the following operation performed on a stack of size 5.

*1/1

```

Push(1);
Pop();
Push(2);
Push(3);
Pop();
Push(4);
Pop();
Pop();
Push(5);

```

After the completion of all operation, the number of elements present in stack is?

- ☒ 1 ✓
- ☐ 2
- ☐ 3
- ☐ 4

✗ What is the disadvantage of using recursion? *

0/1

- ☐ a) It is slower than iterative solutions
- ☐ b) It is harder to implement than iterative solutions
- ☐ c) It can lead to stack overflow errors
- ☒ d) It cannot be used to solve complex problems ✗

Correct answer

- ☒ c) It can lead to stack overflow errors

✓ What is the time complexity for inserting an element at the beginning of an array if array has n elements in it ? *1/1

- ☒ a. $O(n)$ ✓
- ☐ b. $O(1)$
- ☐ c. $O(\log n)$
- ☐ d. $O(n \log n)$

✓ What does the following Java code do? *

1/1

```
public Object function()
{
    if(isEmpty())
        return -999;
    else
    {
        Object high;
        high = q[front];
        return high;
    }
}
```

- ☐ Dequeue
- ☐ Enqueue
- ☒ Return the front element ✓
- ☐ Return the last element

PRN *

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