Question - 1
Java Keywords

SCORE: **5 points**

Easy   Java

Which keyword is used to take control out of the enclosing loop?

- ○ for
- ● break
- ○ if
- ○ continue

Question - 2
Java Constants

SCORE: **5 points**

Easy   Java

How is a constant declared so that it can be accessed without making an instance of a class in which it is declared?

- ○ public final int intConst
- ○ public static int intConst
- ● public static final int intConst
- ○ public int intConst

Question - 3
Java Types

SCORE: **5 points**

Easy   Java

Which of the following is not a Java primitive type?

- ● String
- ○ float
- ○ double
- ○ int
- ○ byte

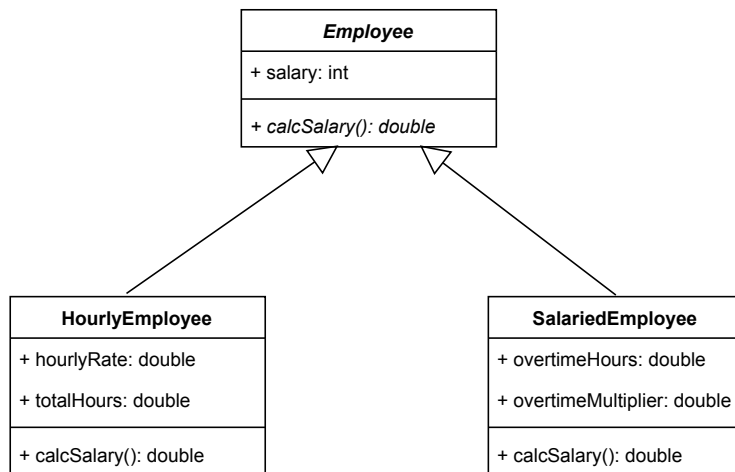# Question - 4
Classes and Objects

| classes and objects | Inheritance | Abstract Class | method overriding | Easy |

Observe the following class diagram and state

```
                          ┌─────────────────────────┐
                          │       Employee          │
                          ├─────────────────────────┤
                          │ + salary: int           │
                          ├─────────────────────────┤
                          │ + calcSalary(): double  │
                          └─────────────────────────┘
                              △               △
                             /                 \
              ┌──────────────────────┐   ┌──────────────────────────────┐
              │    HourlyEmployee    │   │      SalariedEmployee        │
              ├──────────────────────┤   ├──────────────────────────────┤
              │ + hourlyRate: double │   │ + overtimeHours: double      │
              │ + totalHours: double │   │ + overtimeMultiplier: double │
              ├──────────────────────┤   ├──────────────────────────────┤
              │ + calcSalary(): double│  │ + calcSalary(): double       │
              └──────────────────────┘   └──────────────────────────────┘
```

Which of the following statements are true regarding it?

- ⦿ Employee class is abstract and cannot be instantiated.

- ⦿ Both HourlyEmployee and SalariedEmployee class should override the calcSalary() method, in order to get instantiated.

- ◯ Employee class cannot contains concrete methods.

- ◯ There is a composition relationship between Employee and the other two classes.

Question - 5
Method Overloading

| Methods | Method overloading | Easy |

```java
public void foo(ArrayList<String> data)
{
    //some code
}
public void foo (ArrayList<Integer> data)
{
    //some code
}
public ArrayList<String> foo (ArrayList<String> data)
{
    //some code
}
private void foo(List<String> data)
{
    //some code
}
public void foo(ArrayList<String> data, boolean flag)
{
```

```
        //some code
    }
```

Which of the statements are true regarding this code?

○ All the methods are considered as overloaded methods, except for private void foo(List data) because it has a private access modifier.

○ All methods can coexist without issue.

● 'foo(ArrayList)' clashes with 'foo(ArrayList)', as both methods have the same erasure.

● private void foo(List data) { } is an overloaded method, while public ArrayList foo (ArrayList data) { } is not.

Question - 6
Java BufferedReader

`Easy` `file handling`

file1.txt

```
Hello

World
```

file2.txt

```
Hackerrank
```

What is the output of this code?

```
import java.io.*;
public class Main{
    public static void main(String args[]) throws IOException {
        String str1, str2, str=null;
        File file1 = new File("file1.txt");
        File file2 = new File("file2.txt");
        BufferedReader br1 = new BufferedReader(new FileReader(file1));
        BufferedReader br2 = new BufferedReader(new FileReader(file2));
        while ((str1 = br1.readLine()) != null)
        {
            str2 = br2.readLine();
            if(str2 != null)
            {
                str=str1+" "+str2;
                System.out.println(str);
            }
            br1.close();
        }
    }
}
```

○ Hello World
  IOException: Stream closed

○ Hello Hackerrank
   World

○ Hello World Hackerrank

● Hello Hackerrank
   IOException: Stream closed

Question - 7
Java parseInt

Exception Handling   Easy

What is the output of the following code?

```java
public class Main{
    public static void main(String[] args) {
        try
        {
            int[] a = new int[5];
            String s="1.0";
            try
            {
                System.out.println(Integer.parseInt(s+a[4]));
            }
            catch (Exception e)
            {
                System.out.println("Exception 1 occurs. "+ e.getClass());
            }
            throw new Exception();
        }
         catch (Exception e) {
            System.out.println("Exception 2 occurs");
        }
    }
}
```

○ 1
   Exception 2 occurs

● Exception 1 occurs. class java.lang.NumberFormatException
   Exception 2 occurs

○ Exception 1 occurs. class ArrayIndexOutOfBoundsException
   Exception 2 occurs

○ Compile-Time Error

Question - 8
Java Design Pattern

Easy   Design Patterns

The following code represents which design pattern?

```
class Student {
    private static Student s;
    private Student() {
    }
    public static Student getInstance() {
        if(s == null) {
            s = new Student();
        }
        return s;
    }
}
class Main {
    public static void main(String[] args) {
        Student s;
        s= Student.getInstance();
    }
}
```

- (•) Singleton Design Pattern

- ( ) Factory Design Pattern

- ( ) Adapter Design Pattern

- ( ) Iterator Pattern

Question - 9
Java Concatenate

Interfaces   Easy

In main(), after creating an object of MyClass, which code option returns the string *s* concatenated with the sum of two numbers *x* and *y*?
For example, if *s = 'HackerRank', x = 2,* and *y = 3,* the output should be HackerRank 5

```
public interface MyInterface {
        String foo(String s, int x, int y);
    }
```

```
public class MyClass {
    public String foo2(MyInterface i, String s, int x, int y) {
        return i.foo(s, x, y);
    }
}
```

```
public class Main {
    public static void main(String[] args) {
        MyClass myClass = new MyClass();
        // code to write
    }
}
```

- ( ) String result = myClass.foo2((s, x, y) -> s + " " + x + y, "HackerRank", 2, 3); System.out.println(result);

○ String result = myClass.foo2((s, x, y) -> s + " " + (x + y), "HackerRank", 2, 3); System.out.println(result);

○ String result = myClass.foo2->(s + " " + x + y, "HackerRank", 2, 3); System.out.println(result);

○ String result = myClass.foo2((s, x, y) -> "HackerRank " + 2 + 3); System.out.println(result);

Question - 10
Java Interface

Interfaces   Easy

What is the output of the following program?

```
@FunctionalInterface
public interface MyInterface {
        void foo();
}
```

```
public class MyClass implements MyInterface {
    public void foo() {
        System.out.println("Hello");
    }
}
```

```
public class MyClass2 extends MyClass implements MyInterface{
    public void foo() {
        System.out.println("Hello 2");
    }
}
```

```
public class Main extends MyClass2{
    public static void main(String[] args) {
        MyClass c = new MyClass2();
        c.foo();
    }
}
```

● Hello 2

○ Hello

○ MyClass2 cannot extend a class and an interface at the same time.

○ Runtime error

Question - 11
Java Operators

Java   Easy

What is the value of the variable *z* in the statement `int x = 5; int y = x++; int z = ++y;` ?

○ 5

⦿ 6

○ 7

○ 8

Question - 12
Java Variables

`Java` `Easy`

What is the value of the variable *c* in the statement `int a = 5; int b = 6; int c = a = b;` ?

○ 5

○ 11

○ 56

⦿ 6

Question - 13
Java Inheritance Overriding

`Java` `Polymorphism` `Abstraction` `Inheritance` `OOPS` `Easy`

What will be the output of the following code block?
Animal.java

```
public abstract class Animal
{
        public abstract void makenoise();
}
```

Dog.java

```
public class Dog extends Animal
{
    public void makenoise()
    {
        System.out.println("Make Dog Noise...");
    }
}
```

GoldenRetriever.java

```
public class GoldenRetriever  extends Dog
{
    public void makenoise()
    {
        super.makenoise();
        System.out.println("Make Golden Retriever Noise");
    }
```

```
    public static void main(String ... arg)
    {
        Dog dog=new GoldenRetriever();
        dog.makenoise();
    }
}
```

○ Make Dog Noise...

○ Make Golden Retriever Noise

◉ Make Dog Noise...
  Make Golden Retriever Noise

○ throws ClassCastException on runtime

Question - 14
Java String Pool

Java   Strings   Language Proficiency   Memory Allocation   Easy

How many strings will be added to the string pool upon execution of the following code block?

```
public static void main(String[] args) {
        String str = "Hello There!";
        String mtr = "Hello" + " " + "There" + "!";
        String dtr = "Hello " + "There" + "!";
        String gtr = "Hello There" + "!";
    }
```

◉ 1

○ 3

○ 5

○ 7

○ 9

Question - 15
Which of the following operators is overloaded for string objects?

Easy   Java   Polymorphism   Operator Overloading

Which of the following operators is overloaded for string objects?

○ +

○ -

○ ==

○ >>

◉ Java doesn't support operator overloading

Question - 16

Select the correct statement, from the options below:

Java   Medium   Garbage Collection

Select the correct statement, from the options below:

◉ If object obj1 can access object obj2 that is eligible for garbage collection, then obj1 is also eligible for garbage collection

○ Objects can be explicitly destroyed using the keyword delete

○ An object will be garbage collected immediately after it becomes unreachable

○ None of the above

Question - 17

Given the following code, what is the most likely result:

Java   OOPS   Programming   Easy

Given the following code, what is the most likely result:

```java
import java.util.*;
public class Compares
{
    public static void main( String args[])
    {
        String[] cities = {"Bangalore","Pune","San Francisco","New York City"};
        MySort ms = new MySort();
        Arrays.sort(cities, ms);
        System.out.println(Arrays.binarySearch(cities, "New York City"));
    }
    static class MySort implements Comparator
    {
        public int compare( String a, String b)
        {
            return b.compareTo(a);
        }
    }
}
```

○ -1

○ 1

○ 2

◉ Compilation fails

Question - 18
Bitwise Operators in Java

Java	Easy	Operators

Consider the following Java snippet:

int x = 3 & 5;

int y = 3 | 5;

The values of 'x' and 'y' (respectively) are:

- ⦿ 1,7

- ◯ 2,8

- ◯ 8,-2

- ◯ 1,8

- ◯ 2,7

Question - 19
JDK Designe Patterns

Java	Algorithms	Easy

One example of _____ Design pattern from JDK itself is the Collections.sort() method and the Comparator Interface, through which we can specify different criteria for sorting a collection of objects.

Which of the following is the best fit for the blank in this line?

- ◯ Singleton

- ◯ Adapter

- ◯ Factory

- ⦿ Strategy

Question - 20
Value of k After Function Runs

Java	OOPS	Easy	Programming

Which is true of the following program?

```
public class TestFirstApp {
        static void doIt(int x, int y, int m) {
        if (x == 5) {
                m=y;
        } else {
```

```
            m=x;
        }
    }

    public static void main(String[] args) {
        int i=6, j=4, k=9;
        TestFirstApp.doIt(i,j,k);
        System.out.print(k);
    }
}
```

○ Doesn't matter what the values of i and j are, the output will always be 5 .

○ Doesn't matter what the values of k and j are, the output will always be 5 .

◉ Doesn't matter what the values of i and j are, the output will always be 9 .

○ Doesn't matter what the values of k and j are, the output will always be 9 .

Question - 21
Default Packages

Java   Easy

Which of the following packages is imported by default?

◉ java.lang

○ java.io

○ java.math

○ java.text

Question - 22
Automatic Imports

Java   Easy

Classes from packages **java.lang, java.io and java.util** are imported by default without having to be specified explicitly using import statements in a Java program.

True or False?

○ True

◉ False

Question - 23
Static Code Analysis 3

Java   Easy   Exception Handling   OOPS   Programming

What will be the output of this Java code snippet? Assume that all necessary imports have been taken care of.

```java
public class Test{
    public static void main(String args[]) {
        try {
            int x = 0;
            for (x=1; x<4; x++);
            System.out.println(x);
        } catch(Exception e) {}
        finally {
            System.out.println("Error");
        }
    }
}
```

○ 1 2 3

○ 4

○ 1 2 3 4

⦿ 4 Error

Question - 24
Interfaces

SCORE: **5 points**

Java   Easy   Interfaces   OOPS   Programming

Which of the below is true about Interfaces?

○ Interface can contain constructors

○ A class can implement just one interface

○ An interface can declare public and protected method only

⦿ An interface cannot have instance variables

Question - 25
Will This Compile? 2

SCORE: **5 points**

Java   Medium   OOPS   Programming

What is the output for the below code ?

```java
public  class A {
    public void printName(){
        System.out.println("Value-A");
    }
}
public class B extends A{
    public void printName(){
        System.out.println("Value-B");
    }
```

```
    }


public class C extends A{
    public void printName(){
        System.out.println("Value-C");
    }
}


1. public class Test{
2.     public static void main (String[] args) {
3.         B b = new B();
4.         C c = new C();
5.         b = c;
6.         newPrint(b);
7.     }
8.      public static void newPrint(A a){
9.          a.printName();
10.     }
11. }
```

○ Value-B

○ Value-C

● Compilation fails due to an error on lines 5

○ Compilation fails due to an error on lines 9

Question - 26
Java Class Path

Java   Easy

There is a java file named *Test.java* that needs access to a class contained in *app.jar* in the *exam* directory.

Which of the following commands sets classpath to compile clean?

● javac -classpath exam/app.jar Test.java

○ javac -classpath app.jar Test.java

○ javac -classpath exam Test.java

○ None of the above

Question - 27
Java Print a Sum

Java   Language Proficiency   Classes   Inheritance   OOPS   Easy

What is the output of the following code?

```
1. public  class A {
2.     int add(int i, int j){
3.         return i+j;
```

```
4.        }
5. }
6. public class B extends A{
7.      public static void main(String argv[]){
8.          short s = 9;
9.          System.out.println(add(s,6));
10.     }
11.}
```

○ Compilation fails due to an error on line 2

● Compilation fails due to error an on line 9, non-static method referenced from a static context.

○ Compilation fails due to a type mismatch on line 9.

○ 15

Question - 28

SCORE: 5 points

What is result of the following command?

Java   Easy

What is result of the following command?

```
1. import java.util.*;
2. class Priorities {
3.      public static void main(String[] args) {
4.          PriorityQueue toDo = new PriorityQueue();
5.          toDo.add("dishes");
6.          toDo.add("laundry");
7.          toDo.add("bills");
8.          toDo.offer("bills");
9.          System.out.print(toDo.size() + " " + toDo.poll());
10.          System.out.print(" " + toDo.peek() + " " + toDo.poll());
11.          System.out.println(" " + toDo.poll() + " " + toDo.poll());
12.     }
13. }
```

○ 3 bills dishes laundry null null

○ 3 bills bills dishes laundry null

○ 3 dishes dishes laundry bills null

○ 4 bills bills dishes laundry null

● 4 bills bills bills dishes laundry

○ 4 dishes laundry laundry bills bills

○ Compilation fails.

○ An exception is thrown at runtime.

Question - 29

SCORE: 5 points

Which of the following statements is correct? Select the one correct answer.

14/21

Which of the following statements is correct? Select the one correct answer.

○   Each Java file must have exactly one package statement to specify where the class is stored.

○   If a Java file has both an import and a package statement, the import statement must come before package statement.

○   A Java file must have at least one class defined.

◉   If a Java file has a package statement, it must be the first statement (except comments).

Question - 30
Arrays in Java

SCORE: **5 points**

Java   Easy   Data Structures   Arrays

Which of the following statements is true?

◉   Arrays in Java are essentially objects.

○   It is not possible to assign one array to another. However, individual elements of the array can be assigned.

○   Array elements are indexed from 1 to the size of the array.

○   If a method tries to access an array element beyond its range, a compile warning is generated.

Question - 31
Java: Inner Classes

SCORE: **5 points**

Application Development   Java   Language Proficiency   Problem Solving   Easy

Examine the following Java code, it includes an inner class, what will be the output of the following code?

```java
public final class Test4 {
        class Inner {
                void test() {
                        if (Test4.this.flag) {
                                sample();
                        }
                }
        }
        private boolean flag = true;
        public void sample() {
                System.out.println("Sample");
        }
        public Test4() {
                (new Inner()).test();
        }
        public static void main(String args []) {
                new Test4();
        }
}
```

○ Prints out "Sample"

○ Program produces no output but terminates correctly

○ Program does not terminate.

○ The program will not compile

Question - 32
C++ Loop Control

| Application Development | Java | Easy |

Given the following code what is the effect of a = 5:

```
public class Test {
        public void add(int a) {
loop: for (int i = 1; i < 3; i++){
            for (int j = 1; j < 3; j++) {
                    if (a == 5) {
                            break loop;
                    }
                    System.out.println(i * j);
            }
        }
    }
}
```

○ Generate a runtime error

○ Throw an ArrayIndexOutOfBoundsException

○ Print the values: 1, 2, 2, 4

● Produces no output

Question - 33
Calling a Constructor

| Application Development | Java | Easy |

Where in a constructor, can you place a call to a constructor defined in the super class?

○ Anywhere

● The first statement in the constructor

○ The last statement in the constructor

○ You can't call super in a constructor

Question - 34
Which of the following statements is correct?

Which of the following statements is correct for a method which is overriding the following method:

```
public void add(int a) {...}
```

● the overriding method must return void

○ the overriding method must return int

○ the overriding method can return whatever it likes

Question - 35
Java: Find the Output

Java   Exception Handling   Language Proficiency   Arithmetic Operators   Easy

Consider the following Java code snippet:

```java
public int divide(int a, int b) {
    int c = -1;

    try {
        c = a / b;
    }
    catch (Exception e) {
        System.err.print("Exception ");
    }
    finally {
        System.err.println("Finally ");
    }

    return c;
}
```

What will our code *print* when we call *divide(4, 0)*?

● Exception Finally

○ Finally Exception

○ Exception

○ Finally

○ No output

○ -1

Question - 36
What is the correct declaration of an abstract method that is intended to be pub?

What is the correct declaration of an abstract method that is intended to be public?

- ● public abstract void add();

- ○ public abstract void add() {}

- ○ public abstract add();

- ○ public virtual add();

Question - 37
Java: String Array

Application Development   Java   Arrays   Language Proficiency   Problem Solving   Easy

Which of the following Java declaration of the String array is correct?

- ○ String temp [] = new String {"j" "a" "z"};

- ○ String temp [] = { "j " " b" "c"};

- ○ String temp = {"a", "b", "c"};

- ● String temp [] = {"a", "b", "c"};

Question - 38
Which of the following will output -4.0 ?

Java   Language Proficiency   Math   Easy

Which of the following will output -4.0 ?

- ○ System.out.println(Math.floor(-4.7));

- ○ System.out.println(Math.round(-4.7));

- ● System.out.println(Math.ceil(-4.7));

- ○ System.out.println(Math.Min(-4.7));

Question - 39
Java: Classes

Application Development   Java   Language Proficiency   OOPS   Problem Solving   Easy

Which of the following are true for Java Classes?

- ○ The Void class extends the Class class.

○ The Float class extends the Double class.

○ The System class extends the Runtime class.

◉ The Integer class extends the Number class.

Question - 40
Java : Object Class

| Application Development | Java | Language Proficiency | Problem Solving | Easy |

Which of the following is true?

○ The Class class is the superclass of the Object class.

○ The Object class is final.

◉ The Class objects are constructed by the JVM as classes are loaded by an instance of java.lang.ClassLoader

○ None of the above

Question - 41
Declarations

| Application Development | Java | Easy |

Given the following declarations

```
String s1=new String("Hello")
String s2=new String("there");
String s3=new String();
```

Which of the following are legal operations?

◉ s3=s1 + s2;

○ s3=s1 - s2;

○ s3=s1 & s2

○ s3=s1 && s2

Question - 42
Java String Concatenation

| Application Development | Java | Easy |

What is the output of the following program?

```
public class Question {
        public static void main(String args[]) {
                String s1 = "abc";
                String s2 = "def";
                String s3 = s1.concat(s2.toUpperCase( ) );
                System.out.println(s1+s2+s3);
        }
}
```

○ abcdefabcdef

○ abcabcDEFDEF

◉ abcdefabcDEF

○ None of the above

Question - 43
"Syntax Review 2"

SCORE: **5 points**

Application Development   Java   Easy

What is the result of trying to compile and run this program?

```
public class Test {
  public static void main(String[] args){
    int[] a = {1};
    Test t = new Test();
    t.increment(a);
    System.out.println(a[a.length - 1]);
  }
  void increment(int[] i){
     i[i.length - 1]++;
  }
}
```

○ It generates a compiler error.

◉ It compiles and prints 2.

○ It compiles and prints 1.

○ It compiles and generates an ArrayIndexOutOfBounds exception at runtime.

Question - 44
Java : Division Check

SCORE: **5 points**

Java   Language Proficiency   Easy   Arithmetic Operators

What is the result when one tries to compile and run the following code?

```
public final static void main(String[] args){
  double d = 10.0 / -0;
  if(d == Double.POSITIVE_INFINITY)
```

```
        System.out.println("Positive infinity");
    else
        System.out.println("Negative infinity");
    }
```

(•) Positive infinity

( ) Negative infinity

( ) Will fail to compile

( ) Runtime exception

Question - 45
"Syntax Review 1"

Application Development   Java   Easy

The following code is in a file called Test.java

```java
class Base {
    public static void main(String[] args){
    System.out.println("Hello");
    }
}
public class Test extends Base{}
```

What happens when it is compiled and run?

( ) It fails to compile.

( ) It compiles and generates a runtime error.

( ) It compiles and runs with no output.

(•) It compiles and prints "Hello".

Question - 1
Custom Error

| Error Handling | Javascript | Easy | Type Checking | Variable Scopes |

What is the output of this JavaScript code snippet?

```javascript
class CustomError extends Error {
  constructor(message) {
    super(message);
    this.name = "CustomError";
  }
}

function validateData(data) {
  if (!data || typeof data !== "object") {
    throw new CustomError("Invalid data provided");
  }

  if (!data.hasOwnProperty("id") || typeof data.id !== "number") {
    throw new CustomError("Data object is missing an id property");
  }

  return true;
}

const data1 = { id: 42 };
const data2 = "Invalid data";

try {
  validateData(data1);
  console.log("Data1 is valid");
  validateData(data2);
  console.log("Data2 is valid");
} catch (error) {
  if (error instanceof CustomError) {
    console.log(`CustomError: ${error.message}`);
  } else {
    console.log(`Error: ${error.message}`);
  }
}
```

- ◉ Data1 is valid
  CustomError: Invalid data provided

- ○ Data1 is valid
  CustomError: Data object is missing an id property

- ○ Data1 is valid
  Error: Invalid data provided

○ No output

Question - 2
SetTimeout

SCORE: 5 points

Functions   Javascript   events   Easy   Loops   Javascript Timers   Arrays

What is the output of this JavaScript code snippet?

```javascript
const numbers = [1, 2, 3, 4, 5];

for (var i = 0; i < numbers.length; i++) {
  setTimeout(() => {
    console.log(`Number: ${numbers[i]}`);
  }, i * 1000);
}
```

○ Number: 1
　Number: 2
　Number: 3
　Number: 4
　Number: 5

◉ Number: undefined
　Number: undefined
　Number: undefined
　Number: undefined
　Number: undefined

○ Number: 5
　Number: 5
　Number: 5
　Number: 5
　Number: 5

○ No output will be displayed.

Question - 3
Proxy

SCORE: 5 points

Proxy   Javascript   Type Checking   Easy

```javascript
class Person {
  constructor(name, age) {
    this.name = name;
    this.age = age;
```

```
    }

    greet() {
      console.log(`Hello, my name is ${this.name}.`);
    }
  }

  const personHandler = {
    get(target, property) {
      if (property === "age") {
        return target[property] + " years old";
      }
      return target[property];
    },
  };

  const person = new Person("John", 30);
  const proxyPerson = new Proxy(person, personHandler);

  console.log(proxyPerson.name);
  console.log(proxyPerson.age);
  proxyPerson.greet();
```

What is the output of this JavaScript code snippet?

- ◉ John
  30 years old
  Hello, my name is John.

- ◯ John
  30
  Hello, my name is John.

- ◯ John
  30 year old
  Hello, my name is John.

- ◯ John
  Hello, my name is John
  30 years old.

Question - 4
Currying

SCORE: **5 points**

Javascript   currying   Easy   Function Composition   Currying

What is the value of *result* in the following code?

```
function multiply(a) {
  return function(b) {
    return function(c) {
      return a * b * c;
    };
  };
```

```
  }

  const double = multiply(2);
  const triple = multiply(3);

  const result = triple(double(4)(5))(1);
```

○ Type Error

◉ 120

○ 60

○ 240

Question - 5
Equality

SCORE: 5 points

`Easy` `Javascript` `Type Checking`

What is the output of the following code?

```
const str = "1";
const obj = new String("1");
console.log(obj == "1");
console.log(obj === str);
console.log(obj == str);
```

○ True, False, False

◉ True, False, True

○ True, True, True

○ True, True, False

Question - 6
Closures

SCORE: 5 points

`Javascript` `Javascript Events` `Closures` `Easy` `Closure`

What is the output of the following code?

```
const series = (...funcs) => (arg) => {
    return funcs.reduce((prev, curr) => curr(prev), arg);
};
const result = series(num => num * 10, num => num + 20, num => num / 2, num => num - 5)(4);
```

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○ 20

◉ 25

○ 30

○ 0

Question - 7
JavaScript: Objects

`JavaScript` `Easy` `Error Handling`

Three of the following snippets will create a new JavaScript object with the name "Alex" and age 25. Which one uses incorrect syntax?

○
```javascript
let person = new Object({name: "Alex", age:25});
```

○
```javascript
let person = {name: "Alex", age: 25};
```

○
```javascript
let person = {}
person.name = "Alex";
person.age = 25;
```

◉
```javascript
let person;
person['name'] = "Alex";
person['age'] = 25;
```

Question - 8
JavaScript: Typecasting Functions I

`JavaScript` `Easy` `Hoisting`

Match the JavaScript typecasting functions with their respective output.

Function	Output
1.*String([])*	A. 0
2.*String({})*	B. -Infinity
3. *Number(null)*	C. "[object Object]"

4. *Number("-Infinity")*	D. ""

○ 1. A
2. B
3. D
4. C

◉ 1. D
2. C
3. A
4. B

○ 1. A
2. D
3. B
4. C

○ None of the above

Question - 9
JavaScript: Typecasting Functions II

SCORE: **5 points**

JavaScript   Easy

Match the JavaScript typecasting functions with their respective output.

Function Call	Output
1.*Boolean(Infinity)*	a. 20
2.*Number([20, 30])*	b. true
3. *Boolean("")*	c. NaN
4. *Number(["20"])*	d. false

◉ 1-b
2-c
3-d
4-a

○ 1-d
2-a
3-b
4-c

○ 1-d
2-b
3-a
4-c

○ None of the above

Question - 10
Declare variables with const keyword in JavaScript

`Easy`   `Javascript Aptitude`

One way to declare a variable in JavaScript is to use the keyword *const*. Which of the following are true about *const*? Choose one or more.

○   A variable declared with const is always globally scoped.

◉   A variable declared with const is always block-scoped.

○   A variable declared with const can be re-declared.

○   A variable declared with const can be assigned to later.

Question - 11
Declare variables with let keyword in JavaScript

`Easy`   `Javascript Aptitude`

One way to declare a variable in JavaScript is to use the keyword *let*. Which of the following are true about *let*? Choose one or more.

○   A variable declared with let is always globally scoped.

◉   A variable declared with let is always block-scoped.

○   A variable declared with let can be re-declared.

◉   A variable declared with let can be assigned to later.

Question - 12
localStorage object

`Easy`   `Javascript Aptitude`

The localStorage object is used to store the data locally. Which of the following are true about localStorage objects? Select one or more.

◉   The data in localStorage is stored without an expiration date.

○   localStorage allows for several data types, including numbers and strings.

◉   All data values stored in localStorage are stored as strings.

◉   localStorage is used to store limited data sizes. It is usually restricted to just a few megabytes.

Question - 13
JSON data format

`Easy`   `Javascript Aptitude`

JSON uses a few strict rules to encode its content. Which of the following are true about those rules? Choose one or more.

- 🔘 JSON uses double quotation marks to delimit strings.
- ◯ JSON uses single quotation marks to delimit strings.
- 🔘 Trailing commas are forbidden.
- ◯ Trailing commas are allowed and recommended because of cleaner diffs when working with version control systems.

Question - 14
JavaScript Basics

SCORE: **5 points**

Easy   JavaScript   Javascript Aptitude

JavaScript is perhaps the most widely used programming language for Web client purposes. All modern Web browsers use it. Which of the following are true?

- ◯ JavaScript is a strongly typed language. This implies that adding a number to a string is not possible and will result in a runtime error.
- 🔘 When JavaScript code is executed in a browser, it uses client computational resources rather than server resources.
- ◯ JavaScript does not support recursion.
- 🔘 Angular, React, and Vue are popular JavaScript frameworks used in Web development.

Question - 15
NPM and Bower

SCORE: **5 points**

NPM   Bower   Easy

Which one of the following statements is true?

- 🔘 Bower is an NPM package and can be installed using NPM.
- ◯ NPM is a Bower package and can be installed using Bower.
- ◯ Both NPM and Bower can be installed using each other.
- ◯ Bower and NPM aren't related and cannot be installed using each other.

Question - 16
NPM

SCORE: **5 points**

NPM   Easy

What does NPM stand for?

- 🔘 Node Package Manager
- ◯ Node Packet Manager

○ Node Package Master

○ Node Packet Master

Question - 17
Node Package Installation

NPM | Easy

What is the command to install a node package globally for all the users in the system?

⦿ npm install -g package

○ npm install --glob package

○ npm install package

○ npm_global_install install package

Question - 18
Find the File

NPM | Easy

In general, where is the package.json file present in any node application or module?

○ Inside the node_modules folder

⦿ In the root directory of the application/module

○ Inside the packages folder

○ Package.json is present in the /tmp folder

Question - 19
Meta Data

JavaScript | Easy | Javascript Aptitude

Which file holds the metadata for Grunt plugins?

○ Gruntfile.js

○ Gruntfile.coffee

⦿ Package.json

○ None of these

Question - 20

Method Requirements

If one task depends on the successful completion of another task (or tasks), what method can be used to force Grunt to abort if the other task didn't run, or if the other task failed?

- ( )   this.prerequisite
- ( )   this.successList
- ( )   this.dependencies
- (●)   this.requires

Question - 21
Install Grunt

How can you install Grunt in an Ubuntu Linux server?

- (●)   Using npm
- ( )   Using bower
- ( )   Using apt-get
- ( )   Using dpkg

Question - 22
Task Existence

How do you check if a task exists in Grunt?

- (●)   grunt.task.exists(name)
- ( )   grunt.task.present(name)
- ( )   grunt.task(name)
- ( )   grunt.task.task_exists(name)

Question - 23
Grunt Output III

```
grunt.initConfig({
  log: {
    foo: [1, 2, 3],
    bar: 'hello world',
    baz: false
  }
});

grunt.registerMultiTask('log', 'Log stuff.', function() {
  grunt.log.writeln(this.target + ': ' + this.data);
});
```

What is the output of the following Grunt task, when it is run as `grunt log`?

- ⚪ foo: 1,2,3

- ⚪ baz: false

- ⚪ bar: hello world

- ⦿ foo: 1,2,3 bar: hello world baz: false

Question - 24
Grunt Output II

SCORE: 5 points

JavaScript | Easy | Object Destructuring

```
grunt.initConfig({
  log: {
    foo: [1, 2, 3],
    bar: 'hello world',
    baz: false
  }
});

grunt.registerMultiTask('log', 'Log stuff.', function() {
  grunt.log.writeln(this.target + ': ' + this.data);
});
```

What is the output of the following Grunt task, when it is run as `grunt log:bar`?

- ⚪ foo: 1,2,3

- ⦿ bar: hello world

- ⚪ foo: 1,2,3 bar: hello world baz: false

- ⚪ baz: false

Question - 25
Grunt Output I

SCORE: 5 points

JavaScript | Easy | Object Destructuring

```
grunt.initConfig({
  log: {
    foo: [1, 2, 3],
    bar: 'hello world',
    baz: false
  }
});

grunt.registerMultiTask('log', 'Log stuff.', function() {
  grunt.log.writeln(this.target + ': ' + this.data);
});
```

What is the output of the following Grunt task, when it is run as `grunt log:foo` ?

- ○ foo: 1,2,3 bar: hello world baz: false

- ⦿ foo: 1,2,3

- ○ bar: hello world

- ○ baz: false

Question - 26
Test Specification

JavaScript   Easy   Javascript Aptitude

In Grunt, if you don't specify a test to run, what is the name of the task that gets run by default (assuming the task exists)?

- ○ Main

- ⦿ Default

- ○ Start

- ○ Install

Question - 27
Negative Comparator

JasmineJS   Easy

How do you use a negative comparator in Jasmine?

- ○ .negative

- ⦿ .not

- ○ .negation

- ○ .nor

Question - 28
Declared Variables

JasmineJS   Easy

Variables declared in a describe are available to any *it* block inside the suite. True or False.

- ◉ True

- ◯ False

Question - 29
Pass the Test Case

JasmineJS   Easy   Functions   Callstacks

```
// your applications custom code
function getValue( a, b ) {
    //YOUR CODE COMES HERE
};

// the Jasmine test code
describe("getValue(a, b) function", function() {
    it("should be equal", function(){
        expect( getValue(1, 2) ).toBe( 7 );
    });
    it("should be equal", function(){
        expect( getValue(7, 4) ).toBe( 29 );
     });
});
```

What should be the code at *//YOUR CODE COMES HERE*, so that the Jasmine test cases pass?

- ◯ return 2*a + 3*b;

- ◉ return 3*a + 2*b;

- ◯ return 3*a + 3*b;

- ◯ return 2*a + 2*b;

Question - 30
Execution Stop

JasmineJS   Easy   Javascript Aptitude

In Jasmine, what is the configuration parameter to stop the execution of the script after the first failure of an expectation?

- ◯ stopOnFailure

○ stopSpecOnExpectationFailure

○ exitOnFailure

○ exitSpecOnExpectationFailure

Question - 31
It Functions

SCORE: **5 points**

JasmineJS   Easy   Javascript Aptitude

How many `expect` can we have in an `it` function?

○ 0

○ 1

○ 2

◉ An it function can have any number of expects.

Question - 32
Browser Display

SCORE: **5 points**

JavaScript   Document Object Model   Functions   Easy

Using JavaScript, check whether the browser is online. Display "*I am online*" if it is. Otherwise, display "*I am offline*".
If the browser is online, display the current *latitude* and *longitude* of your location.

```
<p id="status"></p>
<p id="location"></p>
```

The <p> with id="*status*" is used to display the status: *"I am offline"* or *"I am online"*.

The <p> with id="*location*" is used to display the latitude and longitude in the format below:

Latitude: 12.9321589
Longitude: 77.61325529999999

◉ function checkStatus() {

    if(navigator.onLine){
        document.getElementById("status").innerHTML = "I am online";
        if (navigator.geolocation) {
    navigator.geolocation.getCurrentPosition(printLocation);
            }

    }
    else

```javascript
        document.getElementById("status").innerHTML = "I am offline";
}
function printLocation(position) {
        document.getElementById("location").innerHTML = "Latitude: " + position.coords.latitude +
        "<br/>Longitude: " + position.coords.longitude;
    }
```

○
```javascript
        function checkStatus() {

          if(navigator.onLine){
             document.getElementById("status").innerHTML = "I am online";
             if (navigator.geoLocation) {
        navigator.geolocation.getCurrentPosition(printLocation);
               }


          }
          else

             document.getElementById("status").innerHTML = "I am offline";
          }
          function printLocation(position) {
             document.getElementById("location").innerHTML = "Latitude: " + position.coords.latitude +
             "<br/>Longitude: " + position.coords.longitude;
           }
```

○
```javascript
        function checkStatus() {

          if(navigator.online){
             document.getElementById("status").innerHTML = "I am online";
             if (navigator.geolocation) {
        navigator.geolocation.getCurrentPosition(printLocation);
               }


          }
          else

             document.getElementById("status").innerHTML = "I am offline";
          }
          function printLocation(position) {
             document.getElementById("location").innerHTML = "Latitude: " + position.coords.latitude +
             "<br/>Longitude: " + position.coords.longitude;
           }
```

○
```javascript
        function checkStatus() {

          if(navigator.onLine){
             document.getElementById("status").innerhtml = "I am online";
             if (navigator.geolocation) {
        navigator.geolocation.getCurrentPosition(printLocation);
               }


          }
          else
             document.getElementById("status").innerhtml = "I am offline";
          }
          function printLocation(position) {
             document.getElementById("location").innerhtml = "Latitude: " + position.coords.latitude +
```

```
         "<br/>Longitude: " + position.coords.longitude;
     }
```

Question - 33
JavaScript Visibility

JavaScript   Easy   jQuery

A text taken from Wikipedia is given below. You have to toggle the visibility of paragraphs with *class="hide"* when the toggle button is clicked. Initially, all the paragraphs are displayed (see figure 1). When the toggle button is clicked, the visibility of elements with *<p class="hide">* is toggled.

jQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML.

jQuery is the most popular JavaScript library in use today, with installation on 65% of the top 10 million highest-trafficked sites on the Web.jQuery is free, open-source software licensed under the MIT License

jQuery's syntax is designed to make it easier to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications.

jQuery also provides capabilities for developers to create plug-ins on top of the JavaScript library. This enables developers to create abstractions for low-level interaction and animation, advanced effects and high-level, theme-able widgets.

Microsoft and Nokia bundle jQuery on their platforms.[7] Microsoft includes it with Visual Studio[8] for use within Microsoft's ASP.NET AJAX and ASP.NET MVC frameworks while Nokia has integrated it into the Web Run-Time widget development platform.[9] jQuery has also been used in MediaWiki since version 1.16.[10]

jQuery, at its core, is a DOM (Document Object Model) manipulation library. The DOM is a tree-structure representation of all the elements of a Web page and jQuery simplifies the syntax for finding, selecting, and manipulating these DOM elements. For example, jQuery can be used for finding an element in the document with a certain property (e.g. all elements with an h1 tag), changing one or more of its attributes (e.g. color, visibility), or making it respond to an event (e.g. a mouse click).

Toggle

Figure 1

jQuery's syntax is designed to make it easier to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications.

jQuery also provides capabilities for developers to create plug-ins on top of the JavaScript library. This enables developers to create abstractions for low-level interaction and animation, advanced effects and high-level, theme-able widgets.

Microsoft and Nokia bundle jQuery on their platforms.[7] Microsoft includes it with Visual Studio[8] for use within Microsoft's ASP.NET AJAX and ASP.NET MVC frameworks while Nokia has integrated it into the Web Run-Time widget development platform.[9] jQuery has also been used in MediaWiki since version 1.16.[10]

Toggle

Figure 2

The partial code is given below:

```
<script>
<!--Fill in the code here-->
</script>
<p class="hide">jQuery is a cross-platform JavaScript library designed to simplify the client-side scripting of HTML.</h2>

<p class="hide">jQuery is the most popular JavaScript library in use today, with installation on 65% of the top 10 million highest-trafficked sites on the Web.jQuery is free, open-source software licensed under the MIT License</p>

<p>jQuery's syntax is designed to make it easier to navigate a document, select DOM elements, create animations, handle events, and develop Ajax applications. </p>

<p class ="visible">jQuery also provides capabilities for developers to create plug-ins on top of the JavaScript library. This enables developers to create abstractions for low-level interaction and animation, advanced effects, and high-level, theme-able widgets. </p>

<p class="visible">Microsoft and Nokia bundle jQuery on their platforms.[7] Microsoft includes it with Visual Studio[8] for use within Microsoft's ASP.NET AJAX and ASP.NET MVC frameworks while Nokia has integrated it into the Web Run-Time widget development platform.[9] jQuery has also been used in MediaWiki since version 1.16.[10]</p>

<p class="hide">jQuery, at its core, is a DOM (Document Object Model) manipulation library. The DOM is a tree-structure representation of all the elements of a Web page and jQuery simplifies the syntax for finding, selecting, and manipulating these DOM elements. For example, jQuery can be used for finding an element in the document with a certain property (e.g. all elements with an h1 tag), changing one or more of its attributes (e.g. color, visibility), or making it respond to an event (e.g. a mouse click).
</p>
```

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```
<button >Toggle</button>
```

○
```
$(document).ready(function(){
    $("button").click(function()   {
        $("p.hide").Toggle();

    });
});
```

●
```
$(document).ready(function(){
    $("button").click(function()   {
        $("p.hide").toggle();

    });
});
```

○
```
$(document).ready(function(){
    $("button").click(function()   {
        $("p:hide").toggle();

    });
});
```

○
```
$(document).ready(function(){
    $("button").click(function()   {
        $("p:hide").Toggle();

    });
});
```

Question - 34
Code Prediction

SCORE: **5 points**

JavaScript   Easy   Loops   Variable Scopes

Predict the output of the following code:

```
function Education() {
    this.education = "B.Tech";
}



function main() {
    Person = new Education();
    Person.name = "Michael";
    Person.surname = "Hicks";
    var Person;
    Person.residence = "Bangalore";
    Person.age = 23;
    Object.freeze(Person);
    console.log(delete Person.name);

    for (const item in Person) {
        console.log(item);
    }
}
```

○ False education name surname residence age

◉ false education name surname residence age

○ True education surname residence age

○ true education surname residence age

○ false education surname residence age

○ true education name surname residence age

○ Compile time error

Question - 35
Array Element Passing

| JavaScript | Exception Handling | Arrays | Closure | Loops | Easy |

Examine the code snippet below. You have to identify the correct snippet for the main and pass each element of the array *list=[0,4,1,3]* such that for every number less than *2*, the error message, *"num should be greater than 2",* is displayed.

Otherwise, the value returned from the function *twice* is displayed. What could be the possible solution(s)?

```
function Myfunc() {
  this.twice = function(num) {
    if (num < 2) {
      throw "num should be greater than 2"
    }
    return num * 2;
  }
}
```

◉
```
const myfunc = new Myfunc();
const list = new Array(0, 4, 1, 3);
for (let i = 0; i < 4; i++) {
  try {
    const res = myfunc.twice(list[i]);
    console.log(res);
  } catch (e) {
    console.log(e);
  }
}
```

○
```
const myfunc = new Myfunc();
const list = {0, 4, 1, 3};
for (let i = 0; i < 4; i++) {
  try {
    const res = myfunc.twice(list[i]);
    console.log(res);
```

```
  } catch (e) {
    console.log(e);
  }
}
```

○
```
const myfunc = new Myfunc();
const list = [0, 4, 1, 3];
for (let i = 0; i < 4; i++) {
  try {
    const res = myfunc.twice(list[i]);
    console.log(res);
  } catch (e) {
    console.log(e);
  }
}
```

○
```
const myfunc = new Myfunc();
const list = [0, 4, 1, 3];
try {
  for (let i = 0; i < 4; i++) {
    const res = myfunc.twice(list[i]);
    console.log(res);
  }
} catch (e) {
  console.log(e);
}
```

Question - 36
First Five Alerts

SCORE: **5 points**

Closures   JavaScript   Easy   Closure

Select the option that has the correct sequence of first five alert messages, when the following javascript code snippet is run:

```
function func(x) {
    var z = 8;

    return function(y) {
        alert(x + y + z);
    }
}

var n1 = new Number(32);
var a1 = func(n1);
var n2 = new Number(16);
var a2 = func(n2);
var n3 = new Number(8);
var a3 = func(n3);
var n4 = new Number(4);
var a4 = func(n4);
var n5 = new Number(2);
var a5 = func(n5);
a1(2);
a2(4);
a3(8);
a4(16);
a5(32);
```

○   34, 36, 40, 48, 64

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- ○ 2, 4, 8, 16, 32
- ○ 24, 24, 28, 28, 42
- ● 42, 28, 24, 28, 42

Question - 37
Which of the following is not true of Javascript?

SCORE: **5 points**

JavaScript   Web Development   Easy   Javascript Aptitude

Which of the following is not true of Javascript?

- ○ Javascript is case sensitive
- ● Semicolons at the end of Javascript statements are required
- ○ Javascript statements can be grouped together in blocks
- ○ Javascript is loosely typed

Question - 38
What is the Purpose of the 'noscript' tag?

SCORE: **5 points**

JavaScript   Web Development   Easy   Javascript Aptitude

What is the purpose of the 'noscript' tag in javascript? Select the most accurate response

- ○ Suppresses any script results that would be displayed on the web page
- ○ Prevents scripts on the page from executing.
- ● Enclose text to be displayed by non-JavaScript browsers
- ○ All of the above

Question - 39
How to Capture Click Events in a Window

SCORE: **5 points**

JavaScript   Web Development   Easy

Which of the following javascript commands would capture all click events in a web page window?

- ○ window.routeEvents(Event.CLICK);
- ○ window.raiseEvents(Event.CLICK);
- ○ window.handleEvents(Event.CLICK);
- ● window.captureEvents(Event.CLICK);

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Question - 40
querySelector

JavaScript   Web Development   Easy   HTML Tags

In Javascript, consider the following selector:

```
document.querySelector("p.five");
```

Which html elements would this query select in the document? Select the most accurate statement.

- ◯ The first five <p> elements
- ⦿ The first <p> element with class='five'
- ◯ All <p> elements with class='five'
- ◯ None - this is not a valid selector query

Question - 41
Which function would you use to find html elements using tag name?

JavaScript   Web Development   Easy   HTML Tags

Which function would you use to find html elements using tag name?

- ◯ document.getElementByTagName()
- ⦿ document.getElementsByTagName()
- ◯ document.getElementsUsingTagName()
- ◯ document.getElementUsingTagName()

Question - 42
What is the correct way to create a javascript array?

JavaScript   Web Development   Easy   Javascript Aptitude   Arrays

What is the correct way to create a javascript array?

- ⦿ var items = ["Orange","Apple"];
- ◯ var items = {"Orange","Apple"};
- ◯ var items = new array("Orange","Apple");
- ◯ var items[] = {"Orange","Apple"};

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Question - 43
What is the data type of null in Javascript?

JavaScript   Web Development   Easy   Javascript Aptitude

What is the data type of *null* in Javascript?

- ( ) undefined
- ( ) integer
- (●) object
- ( ) none

Question - 44
What is correct way to run a Javascript in "strict mode"?

JavaScript   Web Development   Easy   Javascript Aptitude

What is correct way to run a Javascript in "strict mode"?

- ( )
  ```
  <script mode=strict>
  </script>
  ```

- (●)
  ```
  <script>
  "use strict"
  </script>
  ```

- ( )
  ```
  <script strictMode=True>
  </script>
  ```

- ( )
  ```
  <script strict>
  </script>
  ```

Question - 45
Which of the following javascript functions perform the given tasks correctly?

JavaScript   Web Development   Easy   ES6 Features

Which of the following javascript functions perform the given tasks correctly?

- The function takes one numeric variable as parameter.
- If the variable is 0 than it creates a dialogue box which says "zero".
- If the variable is 1 than it creates a dialogue box which says "one".
- Otherwise it creates a dialogue box which says "Invalid input".

( )

```
const myFunction = value => {
  switch (value) {
    case 0:
      str = "0";
      break;
    case 1:
      str = "1";
      break;
    default:
      str = "Invalid input";
      break;
  }
  return alert(str);
}
```

○
```
const myFunction = value => {
  switch (value) {
    case 0:
      str = "zero";
    case 1:
      str = "one";
    default:
      str = "Invalid input";
  }
  alert(str);
}
```

○
```
const myFunction = value => {
  switch (value) {
    case "0":
      str = "zero";
      break;
    case "1":
      str = "one";
      break;
    default:
      str = "Invalid input";
      break;
  }
  alert(str);
}
```

◉
```
const myFunction = value => {
  switch (value) {
    case 0:
      str = "zero";
      break;
    case 1:
      str = "one";
      break;
    default:
      str = "Invalid input";
      break;
  }
  alert(str);
}
```

Question - 46
JavaScript Reserved Words

SCORE: **5 points**

23/31
```

JavaScript  Easy  Javascript Aptitude

Which of the following are NOT JavaScript reserved words?

○ throws

◉ auto

○ throw

◉ struct

## Question - 47
**What is 'this'?**

SCORE: **5 points**

JavaScript  Web Development  Easy  Javascript Aptitude

In the global execution context (outside of any function), what does the keyword 'this' in javascript refer to? Select the most accurate answer.

○ null

◉ the global object

○ the web page

○ the web browser

## Question - 48
**JS Data Types**

SCORE: **5 points**

JavaScript  Web Development  Easy  Javascript Aptitude

Which of the following is not a primitive Datatype in Javascript?

◉ Array

○ Number

○ String

○ Boolean

## Question - 49
**Value of x**

SCORE: **5 points**

JavaScript  Web Development  Easy  Variable Scopes

Consider the following code. What would the line console.log(x) display  below?

```
var x = 100;

function test() {
    if(false) {
        var x = 199;
    }
    console.log(x); //what does this log?
}

test();
```

○ 100

○ 199

● undefined

○ null

Question - 50
Equivalence Testing in JS

SCORE: **5 points**

JavaScript   Web Development   Easy   Type Checking

Which of the following is a difference between == and === in Javascript? Select the most accurate answer.

○ == compares type and value. === compares type.

○ == compares value. === compares type

● == compares value. === compares value and type

○ == and === are equivalent

Question - 51
Logging to the console

SCORE: **5 points**

JavaScript   Web Development   Easy   Javascript Timers

In what order will the numbers 1-4 be logged to the console when the code below is executed?
```
(function() {
    console.log(1);
    setTimeout(function(){console.log(2)}, 1000);
    setTimeout(function(){console.log(3)}, 0);
    console.log(4);
})();
```

○ 1 2 3 4

○ 4 3 2 1

● 1 4 3 2

○ 1 3 4 2

Question - 52
Screen Properties

JavaScript | Web Development | Easy | Javascript Aptitude

Which of the following is not a screen property in Javascript?

- ( ) Height
- ( ) Width
- (●) Selected
- ( ) ColorDepth

Question - 53
Loops in JavaScript

JavaScript | Web Development | Easy | Loops

Which of the following is not a looping structure in JavaScript?

- ( ) for
- ( ) while
- ( ) do - while
- (●) do - if
- ( ) for each

Question - 54
Which of the following is not a core datatype?

Python | Easy

Which of the following is not a core datatype?

- ( ) Lists
- ( ) Dictionary
- ( ) Tuples
- (●) Class

Question - 55
The XML service(s) enable networking with javascript HTTP requests is:

The XML service(s) enable networking with javascript HTTP requests is:

○ XMLRequest

● XMLHttpRequest

○ XMLHttpResponse

○ All of the above

Question - 56
What is the output?

SCORE: **5 points**

JavaScript   Web Development   Easy   Type Checking

What is the value of y after the following code?

```
let x;
let y = x === null;
```

● false

○ true

○ undefined

○ null

Question - 57
What is the correct way to write a JavaScript array?

SCORE: **5 points**

Web Development   JavaScript   Front-End Development   Easy   Javascript Aptitude   Arrays

What is the correct way to write a JavaScript array?

● var txt = new Array("tim","kim","jim")

○ var txt = new Array="tim","kim","jim"

○ var txt = new Array:1=("tim")2=("kim")3=("jim")

○ var txt = new Array(1:"tim",2:"kim",3:"jim")

Question - 58
JavaScript: Appending Element to the Array

SCORE: **5 points**

```
let arr = [1, 2, 3];
// complete the missing Javascript code on this line
console.log(arr);     // outputs [1, 2, 3, 4]
```

○ arr[arr.length + 1] = value

◉ arr[arr.length] = value

○ arr[arr.length - 1] = value

○ arr = arr + value

Question - 59
SCORE: 5 points

How can you add a comment in a JavaScript?

Web Development   JavaScript   Front-End Development   Easy

How can you add a comment in a JavaScript?

◉ //This is a comment

○ REM This is a comment-->

○ 'This is a comment

○ #This is a comment

Question - 60
SCORE: 5 points

Which of the following HTTP status codes denotes a server error?

Web Development   JavaScript   Front-End Development   Easy   Javascript Aptitude

Which of the following HTTP status codes denotes a server error?

○ 100

○ 200

○ 400

◉ 500

Question - 61
SCORE: 5 points

JavaScript Assignment

Language Proficiency   JavaScript   Problem Solving   Easy   Javascript Aptitude

Consider the following JavaScript code snippet:

```
function foo () {
    return 5
}
```

What will the code `let myVar = foo;` do?

○ Assign the integer value *5* to the variable *myVar*

◉ Assign a reference to the *foo* function to the variable *myVar*

○ Throw an exception

○ Nothing

Question - 62
What is the correct way to have the function checkState called after 10 seconds?

SCORE: **5 points**

Web Development   JavaScript   Front-End Development   Easy   Javascript Timers

What is the correct way to have the function checkState called after 10 seconds?

○ window.setTimeout(checkState, 10);

◉ window.setTimeout(checkState, 10000);

○ window.setTimeout(checkState(), 10000);

○ window.setTimeout(checkState(), 10);

Question - 63
What is the correct syntax to include a script named myScript.js into a page?

SCORE: **5 points**

Web Development   JavaScript   Front-End Development   Easy

What is the correct syntax to include a script named myScript.js into a page?

○ <script href="myScript.js">

○ <script name="myScript.js">

◉ <script src="myScript.js">

○ <script root="myScript.js">

Question - 64
Which HTTP server does AJAX require?

SCORE: **5 points**

Web Development   JavaScript   Front-End Development   Easy   Javascript Aptitude

Which HTTP server does AJAX require?

○ Apache

○ Microsoft web server

◉ Any HTTP server will work

○ Sun application server

Question - 65
Which of the following is the right option?

SCORE: **5 points**

| Web Development | JavaScript | Front-End Development | Easy | HTML Tags |

You want to update the following element with the XMLHttpRequest status. Which of the following approaches is correct for the purpose?
<div id="statusCode"></div>

○ var myDiv = document.getElementById ("statusCode"); myDiv.innerHTML = req.statusCode;

◉ var myDiv = document.getElementById ("statusCode"); myDiv.innerHTML = req.status;

○ var myDiv = document.getElementById ("statusCode"); myDiv.setStatus (req.statusCode);

○ var myDiv = document.getElementById ("statusCode"); myDiv.status = req.status;

Question - 66
What is the purpose of the NOSCRIPT tag?

SCORE: **5 points**

| Web Development | JavaScript | Front-End Development | Easy |

What is the purpose of the NOSCRIPT tag?

○ To prevent the page scripts from executing

○ To shield a part of a page from being modified by JS, so that a statement like aDiv.innerHTML = 'something' has no effect.

◉ To enclose text to be displayed if the browser doesn't support JS

○ There is no NOSCRIPT tag

Question - 67
What should be called before 'send ()' to prepare an XMLHttpRequest object?

SCORE: **5 points**

| Web Development | JavaScript | Front-End Development | Easy | Javascript Aptitude |

What should be called before 'send ()' to prepare an XMLHttpRequest object?

○ prepare ()

- ◉ open ()
- ○ init ()
- ○ build ()

Question - 1
Kubernetes Two or More Instructions

SCORE: **5 points**

Easy   Kubernetes

You are composing a Kubernetes scenario file in YAML format. You want to put more than one instruction inside one file. How can this be achieved?

○ # namespace creation instruction
(one or more space)
pod creation instruction

◉ # namespace creation instruction
---
pod creation instruction

○ # namespace creation instruction
pod creation instruction

○ There is no way to put more that one instruction per file.

Question - 2
Kubernetes Run Command

SCORE: **5 points**

Easy   Kubernetes

After setting up a Kubernetes cluster, you want to run the package manager update process in a particular pod. How this can be achieved?

○ kubectl run pod/frontend-controller-01 --cmd="apt-get update"

○ kubectl exec pod/frontend-controller-01 --cmd="apt-get update"

○ kubectl run pod/frontend-controller-01 -- apt-get update

◉ kubectl exec pod/frontend-controller-01 -- apt-get update

Question - 3
Kubernetes Pod Logs

SCORE: **5 points**

Easy   Kubernetes

After a rollback to the previous deployment of a Kubernetes service, you need to fetch the last log entries of all the pods marked with a specific "publisher" label. What is the correct way to do this?

○ kubectl logs --last=10 -l publisher=hacker-company

○ kubectl get logs --count=10 --selector="publisher=hacker-company"

1/4

○ kubectl logs --tail=10 -l publisher=hacker-company

○ kubectl get logs --count=-10 -l publisher=hacker-company

Question - 4
Kubernetes Find Documentation

`Easy` `Kubernetes`

While refactoring an existing Kubernetes cluster, you want to create a new service but you have forgotten the resource schema. How can you get a short explanation of a specific resource definition?

◉ kubectl explain service

○ kubectl help service

○ kubectl describe service

○ kubectl expose service

Question - 5
Kubernetes Get Deployment Information

`Easy` `Kubernetes`

While optimizing an existing Kubernetes cluster, you need to get extended information about the deployment named "hacker-application". How can you do this?

◉ kubectl describe deployment hacker-application

○ kubectl expose deployment hacker-application

○ kubectl explain deployment hacker-application

○ none of the above

Question - 6
Kubernetes Pods Query

`Easy` `Kubernetes`

As part of your Kubernetes cluster maintenance process, you need to find out all the pods working in the staging environment. You know each pod has a specific label named "environment" which refers to a particular environment name. How can you get all the pods with the label "environment=staging"?

○ kubectl get pods --label environment=staging

◉ kubectl get pods --selector=environment=staging

○ kubectl label environment=staging

○ kubectl expose pods environment=staging

Question - 7
Kubernetes Labels & Annotations

Easy   Kubernetes

You are replicating an existing production deployment on staging. As part of this process, you have decided to attach an environment-oriented label and set annotation. How can you do this?

○ kubectl attach label deployment hacker-application environment=staging
  kubectl set annotation deployment hacker-application url="https://staging.hacker-company.com"

○ kubectl set label deployment hacker-application environment=staging
  kubectl set annotation deployment hacker-application url="https://staging.hacker-company.com"

● kubectl label deployment hacker-application environment=staging
  kubectl annotate deployment hacker-application url="https://staging.hacker-company.com"

○ kubectl create label deployment hacker-application environment=staging
  kubectl create annotation deployment hacker-application url="https://staging.hacker-company.com"

Question - 8
Kubernetes Basic Pod

Kubernetes   Easy

As the next part of your Kubernetes cluster maintenance, you want to test that everything still works properly. For a quick check, you want to execute a test image run. What is the right command?

○ kubectl exec --image=hello-world test

○ kubectl exec --rm -i --image=hello-world --restart=Never test

○ kubectl create image hello-world

● kubectl run --rm -i --image=hello-world --restart=Never test

Question - 9
Kubernetes Deployment Scale

Kubernetes   Easy

While maintaining your company's Kubernetes cluster, you found that Redis deployment should be scaled according to the metrics you see. What command should be executed to scale operation up to 3 (increase the number of ReplicaSets)?

● kubectl scale --replicas=3 -n hacker-company ReplicaSet/redis

○ kubectl scale --number=3 -n hacker-company ReplicaSet/redis

○ kubectl scale --to=3 -n hacker-company ReplicaSet/redis

○ kubectl patch --set="replicas=3" -n hacker-company ReplicaSet/redis

Question - 10
Kubernetes Pods Status

Easy   Kubernetes

You are working on one of your company's existing Kubernetes clusters. You want to retrieve information about all the pods you have for a specific namespace. Which of these commands will achieve this?

○ kubectl explain pods hacker-company

○ kubectl explain pods -n hacker-company

● kubectl get pods -n hacker-company

○ kubectl expose pods -n hacker-company

Spring Boot & Microservices   150 minutes

Question - 1
Error Handling in AWS Lambdas

SCORE: **5 points**

| AWS | Lambda Function | Error Handling | Easy | Node.js |

```
const AWS = require('aws-sdk');
const s3 = new AWS.S3();

exports.handler = async (event, context) => {
  const { Records } = event;
  const promises = Records.map(async (record) => {
    const { s3: { bucket, object } } = record;
    const params = {
      Bucket: bucket.name,
      Key: object.key,
    };

    try {
      const data = await s3.getObject(params).promise();
      console.log(`Successfully retrieved object: ${object.key}`);
      return data;
    } catch (error) {
      console.error(`Error retrieving object: ${object.key}`);
      throw error;
    }
  });

  try {
    const results = await Promise.all(promises);
    return { statusCode: 200, body: JSON.stringify(results) };
  } catch (error) {
    return { statusCode: 500, body: `Error: ${error.message}` };
  }
};
```

Which of the following statements is true about this AWS Lambda function written in Node.js?

○ The function will only log errors encountered when retrieving objects and will not return an error status code to the caller.

○ The Lambda function will continue processing the remaining S3 objects even if an error occurs while retrieving one of the objects.

◉ The Lambda function uses the Promise.all() method to process all S3 objects in parallel and waits for all promises to resolve or reject.

○ The Lambda function processes the S3 objects sequentially, one after another.

Question - 2
Clustered Express Middleware

SCORE: **5 points**

| ExpressJS | Middleware | Easy | Node.js |

```
const cluster = require('cluster');
const os = require('os');
const express = require('express');

if (cluster.isMaster) {
  const numCPUs = os.cpus().length;

  for (let i = 0; i < numCPUs; i++) {
    cluster.fork();
  }

  cluster.on('exit', (worker, code, signal) => {
    console.log(`Worker ${worker.process.pid} died`);
    cluster.fork();
  });
} else {
  const app = express();
  const port = 3000;

  app.get('/', (req, res) => {
    res.send('Hello from the clustered Express server!');
  });

  app.listen(port, () => {
    console.log(`Worker ${process.pid} listening on port ${port}`);
  });
}
```

Which statement is true regarding this snippet?

- ◉ The application forks a new worker process for each available CPU core.

- ◯ The master process listens for incoming requests on a different port than the worker processes.

- ◯ The cluster.isMaster property is used to determine whether the current process is running on a Windows system or not.

- ◯ If a worker process dies, it will not be replaced by a new worker process.

Question - 3
Mocking Beans

SCORE: 5 points

`Spring Test` `Easy` `Mockito` `Spring Mocking`

Given the following implementation of *DataService* which uses *ApiClient* component to call external APIs:

```
@Component
public class ApiClient {
  public void call() {
    //not relevant code
  }
}

@Service
public class DataService {
  @Autowired
  private ApiClient apiClient;
  public void collectData() {
    apiClient.call();
```

```
        }
    }
```

The requirement is to implement the test and don't call external API during the test execution. The following code has been implemented:

```
    @SpringBootTest
    class DataServiceTest {
      <CODE HERE>
      @Autowired
      DataService dataService;
      @Test
      void collectData() {
        dataService.collectData();
        //test code
      }
    }
```

What should be inserted instead of *<CODE HERE>* to achieve the goal?

○ @Mock ApiClient apiClient; @InjectMocks

○ @InjectMocks

◉ @MockBean ApiClient apiClient;

○ @Captor ApiClient apiClient;

○ @SpyBean ApiClient apiClient;

Question - 4
Secure Method

SCORE: **5 points**

`Spring Expression Language` `spring security` `Easy`

Given the following controller method, assume that *usersService* is correctly implemented and autowired.

```
    <CODE_HERE>
    @GetMapping("/users/{id}")
    public ResponseEntity<UserResponse> get(@PathVariable @NotNull UUID id) {
      return ResponseEntity.ok(usersService.get(id));
    }
```

The requirement is to make sure that only users with any of *ROLE_ADMIN* or *ROLE_USER_MANAGER* roles assigned will be able to execute this method. What can be put in place of '<CODE_HERE>' to implement this requirement using Spring Security?

○ @PostAuthorize("hasRole('ROLE_ADMIN') or hasRole('ROLE_USER_MANAGER')")

◉ @PreAuthorize("hasAnyRole('ROLE_ADMIN','ROLE_USER_MANAGER')")

○ @Secured("hasRole('ROLE_ADMIN') or hasRole('ROLE_USER_MANAGER')")

○ @PreAuthorize("hasRole('ROLE_ADMIN') and hasRole('ROLE_USER_MANAGER')")

Question - 5
Transactional Tests

SCORE: **5 points**

`Spring Test` `Easy` `transaction management`

Given the following test code, which of the statements is true?

```
@ExtendWith(SpringExtension.class)
@Transactional
@ContextConfiguration
class UserRepositoryTest {
  @Test
  @Commit
  void test1() {
    /* non relevant code */
  }
  @Test
  @Rollback(false)
  void test2() {
    /* non relevant code */
  }
}
```

○ Only the transaction for method test1() will be committed.

○ Only the transaction for method test2() will be committed.

◉ Transactions for both methods will be committed.

○ @Transactional will lead to a runtime error when running the tests.

Question - 6
Postgres Specific Service

`Starter Parent` `Spring Configuration` `Easy`

The requirement is to implement a Spring Boot @*Service* that should be loaded to the spring context only if the *org.postgresql.Driver* class is present on the classpath, and the *application.properties* file contains the property *database.vendor=postgres*.

```
<CODE HERE>
@Service
public class PostgresSpecificService {
  /* not relevant code*/
}
```

Which of the following annotation options can replace *<CODE HERE>* to achieve this?

○ @ConditionalOnProperty(name = "database.vendor", value = "postgres") @ConditionalOnClass(name = "org.postgresql.Driver")

◉ @ConditionalOnProperty(prefix = "database", name = "vendor", havingValue = "postgres") @ConditionalOnClass(name = "org.postgresql.Driver")

○ @ConditionalOnProperty(name = "database.vendor", havingValue = "postgres") @ConditionalOnMissingBean(org.postgresql.Driver.class)

○ @ConditionalOnProperty(prefix = "database", name = "vendor", havingValue = "postgres") @ConditionalOnBean(name = "org.postgresql.Driver")

○ None of the above

Question - 7
Bean Scopes

SCORE: 5 points

Starter Parent   Easy   Spring Scope

Consider the following code.

```
<CODE HERE>
public class Processor {
  public void process() {
    /* not relevant code */
  }
}

@RestController
public class ProcessController {
  @Autowired
  private Processor processor;
  @GetMapping("/process")
  public void process() {
    processor.process();
  }
}
```

What should be inserted in place of *<CODE HERE>* to have a new instance of processor created every time the */process* endpoint is called?

- ○ @Scope("prototype") @Component

- ○ @Prototype

- ● @Component @Scope(scopeName = "prototype", proxyMode= ScopedProxyMode.TARGET_CLASS)

- ○ @Component(`autowireCandidate=true`)

- ○ @Service(alwaysNew=true)

Question - 8
Spring AOP Usage

SCORE: 5 points

Spring   Spring Boot   Easy

Consider the following code.

NotifierMetricLogger.java

```
package spring.listener;

import org.aspectj.lang.annotation.Around;
import org.aspectj.lang.annotation.Aspect;
import org.aspectj.lang.annotation.Before;
import org.aspectj.lang.annotation.AdviceName;
import org.springframework.stereotype.Component;
import org.aspectj.lang.JoinPoint;
import org.aspectj.lang.ProceedingJoinPoint;
import java.util.logging.Logger;

//X
@Component
public class NotifierMetricLogger {
```

```
        private static final Logger log = Logger.getLogger(NotifierAspect.class.getName());
        //Y
        public Object beforeNotifyLogging(ProceedingJoinPoint joinPoint) throws Throwable {
            long startDate = System.currentTimeMillis();
            Object proceed = joinPoint.proceed();
            long executionTime = System.currentTimeMillis() - startDate;
            log.info("Notify process time :" + executionTime);
            return proceed;
        }
    }
```

TwitterNotifier.java

```
package spring.service.impl;

import spring.service.Notifier;
import org.springframework.stereotype.Component;
import java.util.logging.Logger;

@Component
public class TwitterNotifier implements Notifier {
    private static final Logger log = Logger.getLogger(TwitterNotifier.class.getName());
    @Override
    public void notify(String message) {
        log.info("TwitterNotifier: " + message);
        //send notification to home page
    }
}
```

Notifier.java

```
package spring.service;

public interface Notifier {
    void notify(String message);
}
```

Assuming the Spring Boot application is configured to use AOP with @EnableAspectJAutoProxy(proxyTargetClass = true) annotation, to capture *TwitterNotifier.notify(String message)* method's process time, which of the following options should be placed in the *X* and *Y* positions in NotifierMetricLogger.java?

○ X = @Aspect
   Y = @Before("execution(* spring.service.impl.*.notify(..))")

○ X = @AdviceName("NotifierMetricLogger")
   Y = @Around("execution(* spring.service.impl.*.notify(..))")

○ X = @AdviceName("NotifierMetricLogger")
   Y = @Before("execution(* spring.service.impl.*.notify(..))")

◉ X = @Aspect
   Y = @Around("execution(* spring.service.Notifier.notify(..))")

Question - 9
Spring Circular Bean Trap

`Spring` `Spring Boot` `Easy`

Consider the following code.

Circular.java

```
package spring.circular;

public interface Circular {
    void doCircularThings();
}
```

CircularBeanA.java

```
package spring.circular;
import org.springframework.stereotype.Component;
import javax.annotation.PostConstruct;

//X
@Component
public class CircularBeanA implements Circular {
    private Circular circularBeanB;

    public CircularBeanA(
        //Y
        Circular circularBeanB) {
        this.circularBeanB = circularBeanB;
    }

    @Override
    public void doCircularThings() {
        System.out.println("CircularBeanA: did bad things");
    }

    @PostConstruct
    private void init() {
        System.out.println("CircularBeanA: initialized");
    }
}
```

CircularBeanB.java

```
package spring.circular;

import org.springframework.context.annotation.Lazy;
import org.springframework.stereotype.Component;
import javax.annotation.PostConstruct;

@Component
public class CircularBeanB implements Circular {
    private Circular circularBeanA;

    public CircularBeanB(
        @Lazy
        //Z
        Circular circularBeanA) {
        this.circularBeanA = circularBeanA;
    }

    @Override
    public void doCircularThings() {

    }

    @PostConstruct
```

```
    public void init() {
        System.out.println("CircularBeanB: initialized");
        circularBeanA.doCircularThings();
    }
}
```

Which of the following options are true regarding this code?

○ The application runs successfully and it'll output
CircularBeanA: initialized
CircularBeanB: initialized
CircularBeanA: did bad things

○ The application won't run.
The code doesn't compile.

○ The application runs but it will throw `NoUniqueBeanDefinitionException` and it will exit.

○ If @Qualifier("circularBeanA") annotation is put on Z and @Qualifier("circularBeanB") put on Y, the application will not throw
BeanCurrentlyInCreationException and runs successfully.

◉ The application runs and it will write
CircularBeanB: initialized into console then
it will throw org.springframework.beans.factory.BeanCurrentlyInCreationException.

◉ If @PostConstruct annotation is removed in CircularBeanB, it will run successfully and will print
CircularBeanA: initialized into console

○ if @Primary annotation is put in X place, it will run successfully.

Question - 10
Bean definition enhancement

SCORE: **5 points**

Spring Boot   Starter Parent   Easy

During the startup of a Spring Boot application, it needs to read bean configuration metadata and change it before the container instantiates any beans.

How can this be achieved in an efficient and scalable way?

○ Implement BeanPostProcessor.

◉ Implement BeanFactoryPostProcessor.

○ It is not possible to change beans metadata on runtime. All beans metadata is defined at compile time.

○ Implement Aspect.

Question - 11
Behavior Inheritance

SCORE: **5 points**

Spring Boot   Starter Parent   Easy

A Spring Boot application has the following hierarchy of classes.

```
public class Animal {
    @PostConstruct
    private void init() {
        System.out.println("Animal init");
```

```
    }
  }

  @Component
  public class Cat extends Animal{
    @PostConstruct
    public void init() {
      System.out.println("Cat init");
    }
  }

  @Lazy
  @Component
  public class Dog extends Animal{
    @PostConstruct
    public void init() {
      System.out.println("Dog init");
    }
  }
```

What is the output?

○ IllegalBeanDefinitionException: @PostConstruct should be applied to a public method

○ Cat init Dog init

● Animal init Cat init

○ Animal init Cat init Animal init Dog init

○ Animal init Cat init Dog init or Animal init Dog init Cat init

Question - 12 Multiple Beans Definition	SCORE: 5 points

`Spring` `Spring Boot` `Dependency Management` `Easy`

A Spring application has an interface called *Server,* and two implementations: *ServerA* and *ServerB*. There is a class, *ServerManager,* that uses the *Server* bean as a dependency.

```
  public interface Server {
  }

  @Service
  public class ServerA implements Server {
  }

  @Service
  public class ServerB extends ServerA {
  }


  @Service
  public class ServerManager {
    @Autowired
    Server server;
  }
```

Which of the following statements is true about this code?

○ The code throws `InterfaceNotInstantiatableException`.

○ The code runs fine. A random Server implementation is injected into the `server` field.

● The code throws `NoUniqueBeanDefinitionException`.

○ The code does not compile.

Question - 13
Testing a Spring Application

`Spring` `Spring Boot` `Spring Test` `Easy`

There is a Spring boot web application that uses a relational database for data storage. The *org.springframework.boot:spring-boot-starter-data-jdbc* starter is used in the implementation of the data access layer. Now tests are needed that cover the functionality of the data layer in isolation.

What Spring test annotation is recommended when constructing the test context?

○ @DataJpaTest

● @DataJdbcTest

○ @SpringBootTest

○ @WebMvcTest

Question - 14
Path Variable

`Spring` `Spring Boot` `Spring MVC` `Easy`

In the Spring MVC controller, which of these are valid uses of the @PathVariable annotation?

● @RequestMapping(value="/users/{userId}/addresses/{addressId}") public String viewUserAddress(@PathVariable String userId, @PathVariable String addressId, Model m)

○ @RequestMapping(value="/users/{userId}") public String viewUser(@PathVariable("users") String user, Model m)

● @RequestMapping(value="/users/{userId}") public String viewUser(@PathVariable String userId, Model m)

● @RequestMapping(value="/users/{userId}") public String viewUser(@PathVariable("userId") String personnelId, Model m)

Question - 15
Component Dependency

`Spring` `Spring Boot` `Configuration` `Easy`

The following @Configuration contains definitions for 2 beans: ServiceA and ServiceB. Imports are omitted.

```
@Configuration
public class ServiceConfiguration {
  @Bean
  public ServiceA serviceA(ServiceB serviceB) {
    return new ServiceA(serviceB);
```

```
    }
    @Bean
    public ServiceB serviceB(ServiceC serviceC) {
      return new ServiceB(serviceC);
    }
    @Bean
    public ServiceC serviceC(ServiceA serviceA) {
      return new ServiceC(serviceA);
    }
  }
```

Which of the following statements is true?

○ This code does not compile.

○ This code runs fine and creates 3 Beans: `ServiceA`, `ServiceB` and `ServiceC`.

● The code throws `BeanCurrentlyInCreationException` when run.

○ The code throws `StackoverflowError` when run.

Question - 16
Application Properties Override

Spring Boot   Application Properties   Easy

In the classpath of a Spring Boot application, there are 2 files with properties *application.properties* and *application-prod.properties*. It is required to always load properties from *application.properties* and override with values in the *application-prod.properties* file only when the application is deployed on the production server.

What should the value of the environment be to achieve this on the production server?

○ spring.properties=application-prod.properties

○ spring.profiles.active=application-prod

● spring.profiles.active=prod

○ environment=prod

Question - 17
Create a User Controller

Spring Boot   Spring MVC   Easy

An *HTTP POST* endpoint accepts a JSON representation of a *User* object. It uses the following *User* and *UserController* classes.

```
public class User {
  @NotEmpty
  private String name;
  @NotEmpty
  private String surname;
}

@RestController
public class UserController {
```

```
@PostMapping("/users")
public void create(@RequestBody User user) {
 System.out.println("name: "+user.getName() + " surname: "+user.getSurname());
}
}
```

What is the result of a call with the payload below?

```
{
 "name": "Duke",
 "surname": null
}
```

○ BAD REQUEST 400 and a message that `user.surname` is validated by @NotEmpty annotation.

◉ OK 200 and prints 'name: Duke surname: null'

○ SERVER ERROR 500 because of a NullPointerException during validation of `null` string for @NotEmpty

○ OK 200 and prints 'name: Duke surname:'

Question - 18
Spring Dependency Injection

Spring   Easy

```
@Service
public ProductService {
    private ProductRepository productRepository;
    private ProductMapper productMapper;

    @Autowired
    public ProductService(ProductRepository productRepository,
                          ProductMapper productMapper){
        this.productRepository = productRepository;
        this.productMapper = productMapper;
    }

}
```

Which type of injection is implemented in the ProductService?

○ Setter

○ Getter

○ Property

◉ Construction

Question - 19
Profile

Which command-line argument starts a Spring Boot application with the "staging" Spring profile?

- ○ --spring.active.profile=staging

- ○ --profiles.active=staging

- ○ --active.profile=staging

- ◉ --spring.profiles.active=staging

Question - 20
Query Annotation

SCORE: **5 points**

Spring Boot   Easy

Which of the following annotations can be used for a specific custom query in a Spring data JPA repository method?

- ○ @JpaQuery

- ○ @SqlQuery

- ○ @DataQuery

- ◉ @Query

Question - 21
Property Value Injection

SCORE: **5 points**

Spring Boot   Easy

Which of the following annotations can be used to inject property values into Spring Boot beans and configuration classes?

- ○ @Values

- ○ @Property

- ○ @Inject

- ◉ @Value

Question - 22
Dependency Injection

SCORE: **5 points**

Spring Boot   Easy

Which of the following options can be used for dependency injection in Spring Boot?

- ◉ Setter injection

- ( ) jsonConfiguration
- (●) Constructor injection
- (●) @Autowired

Question - 23
Endpoints

Spring Boot   Easy

Which Spring-based code snippet must fill the blank such that Actuator security rules are present, and all endpoints fetch for actuator?

```
@Bean
public PrivacyChain demoChain(ServerHttpSecurity http) {
    return http.authorizeExchange()
    .pathMatchers(_____).permitAll()
    .and().build();
}
```

- ( ) /actuators/**
- ( ) /actuators.**
- (●) /actuator/**
- ( ) /actuator/info/**

Question - 24
Actuator

Spring Boot   Easy

A dependency has been added to pom.xml in a Spring application as follows.

```
<dependency>

<groupId>org.springframework.boot</groupId>

<artifactId>spring-boot-starter-actuator</artifactId>

</dependency>
```

What is the starter used for?

- (●) application analysis
- ( ) creation of an application
- ( ) automation of an application
- ( ) production of application instances

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Question - 25
Validator

Spring Boot   Easy

In a RESTful application using Spring, which of the following is not used to create an object validator?

- ○ @Min(value = 1)
  @Max(999999)
  private int id;

- ● @Size(limit = 100)
  private String name;

- ○ @NotNull
  private Boolean isActive;

- ○ @ValidCategory(categoryType="sample")
  private String category;

Question - 26
Rest Handle

Spring Boot   Easy

When building a Spring-based RESTFul application, a new resource must be created with the request URI of "/handle". Which of the following code segments is most appropriate?

- ● @RestController
  public class demoHandler {
    private static Map<String, Product> dataRepo = new HashMap<>();
    @RequestMapping(value = "/handle", method = RequestMethod.POST)
    public ResponseEntity<Object> createProduct(@RequestBody Product product) {
       ....
    }
  }

- ○ @RestController
  public class demoHandler {
    private static Map<String, Product> dataRepo = new HashMap<>();
    @RequestMapping(value = "/handle", method = RequestMethod.DELETE)
     public ResponseEntity<Object> createProduct(@RequestBody Product product) {
       ....
    }
  }

- ○ @RestController

```
public class demoHandler {
   private static Map<String, Product> dataRepo = new HashMap<>();
   @RequestMapping(value = "/handle", method = RequestMethod.CREATE)
   public ResponseEntity<Object> createProduct(@RequestBody Product product) {
       .......
   }
}
```

○   @RestController
     public class demoHandler {
        private static Map<String, Product> dataRepo = new HashMap<>();
        @RequestMapping(value = "/handle", method = RequestMethod.GET)
        public ResponseEntity<Object> createProduct(@RequestBody Product product) {
            ....
        }
     }

Question - 27 Classes Segment	SCORE: 5 points

Spring Boot   Easy

A Spring application has four classes. Select the option which would contain the business logic.

◉   @Service public class A{ .. }

○   @Repository public class A{ .. }

○   @Primary public class A{ .. }

○   @Session public class A{ .. }

Question - 28 Mechanism	SCORE: 5 points

Spring Boot   Easy

Which annotation should be used instead of <<blank>> that will allow one to use the class for data storage, update, and retrieval?

```
 <<blank>>
 public class DemoSession implements DemoInterface{

    @Override
    public void save(Student student) {
     .....
     }
 }
```

○ @Service

◉ @Repository

○ @Session

○ @Autowired

Question - 29	SCORE: 5 points
Spring Annotation	

`Spring Boot` `Easy`

What does the annotation in this Spring-based code segment do?

```
@Component
public class ComponentExample {
  int x;
  public void show(){
    System.out.println("Hello");
  }
}
```

○ It allows Spring to create containers.

○ It allows Spring to create components.

○ It allows Spring to collect bean instances.

◉ It allows Spring to detect custom beans automatically.

Question - 30	SCORE: 5 points
Employee	

`Spring Boot` `Easy`

In the following Spring Boot code, what kind of dependency is injected by the annotation?

```
public class Employee {

  @Autowired
  private Roll roll;

  Employee() {
  }
}
```

○ constructor based

○ setter bean

○ field based

○ Spring IOC

Question - 31
Book

SCORE: **5 points**

| Easy | Spring Boot |

```
@Entity
public class Book {

    @Id
    Long id;
    String author;
    String year;
    ....
}
```

For this model, which option is a valid derived query method for its corresponding JpaRepository?

○ findAuthorById

● findByAuthor

○ findByAuthorAndIdAndYear

○ findBook

Question - 32
FooBar

SCORE: **5 points**

| Easy | Spring Boot |

Which link will hit the following method, where the application context is '/home'?

```
@RequestMapping(value = {"/ex/basic/bar", "/ex/basic/foo"}, method = RequestMethod.GET)
public String getPath() {
    return "FooBar";
}
```

● "GET request http://localhost:8080/home/ex/basic/bar"

○ "GET request http://localhost:8080/home/ex/basic"

○ "POST Request http://localhost:8080/home/ex/basic/bar"

○ Two routes cannot be mapped to one resource.

Question - 33

SCORE: **5 points**

RESTful

Easy   Spring Boot

In Spring's approach to building RESTful web services, how are the HTTP requests handled?

- ⦿ They are handled by a controller and identified by the @RestController annotation.

- ◯ They are handled by an object.

- ◯ They are handled by a class.

- ◯ They are handled by a controller and identified by the @GreetingController annotation.

Question - 34
Transactions

SCORE: **5 points**

Microservices   Easy

A payment gateway company that integrates PayPal, Stripe, and many other vendors uses microservices for their infrastructure. Whenever a user clicks on the payment button, a request to the backend is made and money is instantly deducted. Whenever a user presses the button twice, the charges are deducted twice. How can you fix this problem?

- ◯ Disable the button after it is pressed one time.

- ◯ Disable the transaction from the backend once it is approved one time.

- ◯ Add an idempotence key to the request and add the transaction to the queue.

- ⦿ A and C

- ◯ A and B

Question - 35
Microservices Security

SCORE: **5 points**

Microservices   Easy

A company deals has implemented the GPT-3 AI Text Generation using microservices infrastructure for handling thousands of users. The operations team receives a notification that three of their services are down. There is evidence of image pullback failure. Upon investigating, they deduced that one of their services was internet facing and was exploited. The exploited service started messaging other services with corrupted data. The team applied security patches to fix the problem.

What is the fix?

- ⦿ The team added mTLS and added rules for inter-service communications. After that, they pushed the internet-facing server behind a load balancer and applied JWT tokens for authentication.

- ◯ The team cut off the internet-facing service from the infrastructure and applied a JWT token for each call to other services.

- ◯ A and B

Question - 36
Semantic Monitoring Drawback

`Easy` `Microservices`

Semantic monitoring (a.k.a. synthetic monitoring) runs a subset of an application's automated tests against the live production system on a regular basis. What are the side effects of semantic monitoring?

- ○ extra load on the services
- ○ There is a probability that tests will inject test data into production.
- ○ There is a possibility that semantic monitoring provides false positives.
- ● All of the above

Question - 37
Tests in Production

`Microservices` `Easy`

Semantic monitoring (a.k.a. synthetic monitoring) runs a subset of an application's automated tests against the live production system on a regular basis. Which of the following options is the most appropriate and actionable benefit of semantic monitoring?

- ● decrease in average downtime as we can pinpoint which service is at fault
- ○ detailed monitoring about production environment
- ○ consistent health checks about different services

Question - 38
Conway's Law

`Microservices` `Easy`

A food retail company has an infrastructure based on microservices. While in development the various departments were isolated from each other and were provided with tight deadlines. The department leads informed their teams that if anything went wrong, they could do it over again.

According to Conway's law (the organization system design structure replicates their communication structure), the scenario should be remedied. Which of the following options correctly remedies the problems that arose in the scenario?

- ○ Give up features while adding more communication channels to the team and create independent teams.
- ○ Restructure the team to report to multiple people at the same time.
- ○ Start micro-managing a set of teams by allocating tasks more closely to make delivery effective.
- ● Restructure and also create independent teams that will dictate their communication channels.

Question - 39
Client Side Load Balancing

Microservices   Easy

A streaming service provider uses a microservices architecture to support its infrastructure. To ensure a seamless user experience, the service uses client-side load balancing, where the client automatically connects to different servers based on availability. However, a security flaw has been identified: the client stores sensitive data, such as server locations and authentication tokens, on the client side, making them vulnerable to exposure and misuse.

What is the most effective way to mitigate this security vulnerability?

○   **A:** Each service will need to authenticate the requests individually and cannot trust other services.

○   **B:** Add more layers of authentication and authorization in between the servers/clients

○   **C:** Add mTLS certificates that expire after 10 minutes.

◉   B and C

Question - 40
Master Master Replication 3

Microservices   Medium

Consider the diagram below.

A team of developers has successfully refactored the system to resolve problems in consistency, latency, and lag. They would like to test the environment before going to production.

How should the following steps be organized to conduct the tests?

1. Perform E2E (end-to-end) tests first and identify the key differences.
2. Divert some production traffic to the test environment to see how it works i.e.
   A/B Testing.
3. Perform unit testing.

○   1 -> 2 -> 3

○   2 -> 3 -> 1

Question - 41
Master Master Replication 2

Microservices   Medium

The team has identified the issues of increased latency, volatile consistency, greater replication lag, and potential for data loss of data in the architecture diagram below. How should the steps be organized to mitigate these issues?

1. Create a separate test environment.
2. Start adding queues and caches.
3. Start refactoring the database.

○ 3 -> 2 -> 1

◉ 1 -> 3 -> 2

○ 1 -> 2 -> 3

○ 2 -> 1 -> 3

Question - 42
Master Master Replication

Microservices   Medium

Consider the diagram below:

READ/WRITE

Service A

Master ←→ Master

Replication

Service B

READ/WRITE

A team of developers manages Service A and Service B. The services read and write data to the Master-Master replication stateful set. What is a potential flaw in the system?

- ○ increased latency due to synchronization

- ○ volatile consistency due to lag in write

- ○ The more read slaves are added to the system, the more you have to replicate, which leads to greater replication lag.

- ○ potential loss of data if one of the masters fails

- ● All of the above.

Question - 43
Microservices Reliability

Microservices   Medium

A chat-based app like Whatsapp is using microservices to connect thousands of real-time users together. They have a flaw in the design of the microservices that all the reads and writes go through one service, "Service A". Service A provides them a great deal of volatility and unpredictability. The company would like to refactor the codebase to address the unpredictability of the system.

Which of the following decisions should they go with?

- ● Separate the read and write APIs into separate services.

- ● Add a queue to the write API and a cache on the read API so the system can efficiently handle messages.

- ○ Add redundancy to Service A.

Question - 44
Disaster Recovery

Microservices   Medium

A common cause of failure in microservices is downstream services. Downstream services are the services that are impure. That is, they have dependencies such as database connections, queues, etc. How would you mitigate the failure of these services?

- ● Add redundancy to the downstream services.

- ○ Add master/worker nodes to the downstream services.

- ○ Add more services to downstream services for better logging and error handling.

○ None of the above

Question - 45
Service Discovery

Service Mesh   Microservices   Easy

On March 8, 2022, a music provider detected a global outage in its services. Their system is based on microservices. For microservices to be able to find each other, they utilize service discovery technologies like Google Traffic Detector. The incident happened due to a bug within Google Traffic Detector.

Since this issue was from a third-party provider, what is the likely solution to this problem?

○ Migrate service discovery to other vendors, e.g. AWS, and Azure.

○ Migrate microservices back to monolith.

◉ Add multiple service discovery options in the infrastructure.

○ Ask the vendor to fix the problem and wait for the fix.

Question - 46
Microservices Usage

Microservices   Easy

A services-based company is building an AI tooling system that can help their client streamline their training and inference data set using AWS Fargate. However Fargate does not provide GPU access to users, and it is expensive for the client. The team decided to implement a custom solution that can scale and train custom models of users. Given the short time span, they have two options:

1. Build the custom Solution using Microservices, LinkerD, MicroK8s.
2. Use an existing system like KubeFlow and build custom features on top of it.

Which of the following is the best way forward?

◉ Try 2 then 1.

○ Try and test 1.

○ Try 1 and then 2.

Question - 47
Distributed System Characteristics

Microservices   Medium   Distributed Systems

Which of the following are advantages of a distributed system?

◉ If one component fails in a distributed system, the remaining components may be able to continue operating.

○ It is less difficult to implement a distributed database system because of its low cost of installation.

○ The amount of processing overhead is less than with a monolithic architecture.

○ It overcomes bottlenecks of the processing pipeline easier than with a centralized system.

Question - 48 **Understanding Microservice**	SCORE: **5 points**

Medium   Distributed Systems   Microservices

Which of the following statements describe the properties of a microservice?

⦿ Focuses on a single responsibility principle

○ Too large and complex to fully understand and make changes fast and correctly.

⦿ Responsible for its own task and communicates with other services through simple APIs to solve a larger complex business problem

○ Should implement a fully testable end-to-end business use-case

Question - 49 **Communication Methods**	SCORE: **5 points**

Distributed Systems   HTTP   JSON   Easy

Which of these is a method of communication between microservices in a larger application?

○ HTTP Protocol

○ Event-driven or Message-driven

○ SOAP

⦿ All of these

Question - 1
MySQL: Column Deletion

SCORE: **5 points**

MySQL   Easy

Choose the expression that deletes a column.

- ( ) DELETE status FROM queue
- (●) ALTER TABLE queue DROP COLUMN status
- ( ) DELETE COLUMN status FROM queue
- ( ) ALTER TABLE queue DROP status COLUMN

Question - 2
MySQL: Self Join

SCORE: **5 points**

MySQL   Easy

Select an expression that demonstrates a self join type.

- (●) SELECT * FROM users users, users clients
- ( ) SELECT * FROM users SELF JOIN users AS clients
- ( ) SELECT * FROM users JOIN users AS clients
- ( ) None of the above, a self join type does not exist in MySQL

Question - 3
MySQL: Sorting Direction

SCORE: **5 points**

MySQL   Easy

Select the extraneous expression (not the same as the others).
Select all that apply.

- ( ) SELECT * FROM categories ORDER BY id
- ( ) SELECT * FROM categories ORDER BY id ASC
- (●) SELECT * FROM categories ORDER BY id DESC
- ( ) None of the above, all expressions are the same.

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Question - 4
MySQL: Comma In From Clause

MySQL   Easy

Choose the correct explanation of the next query:

```
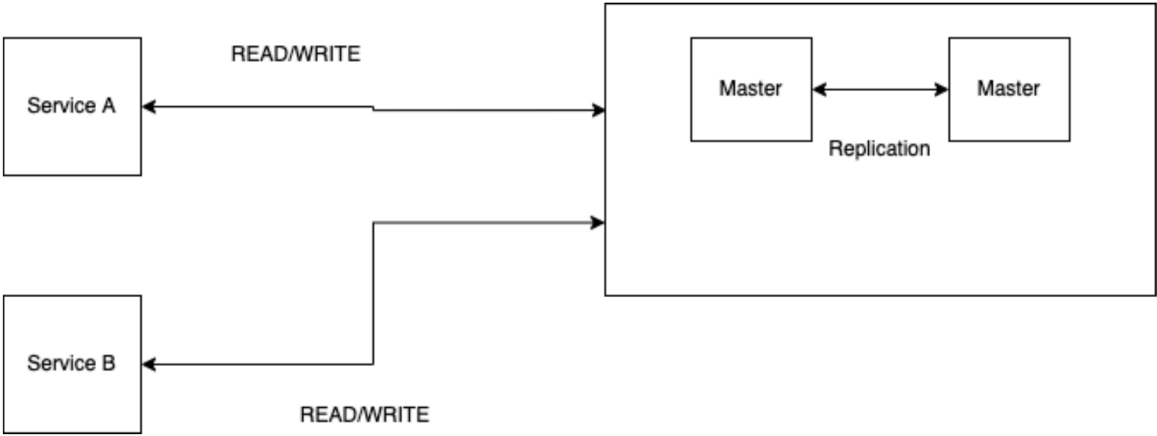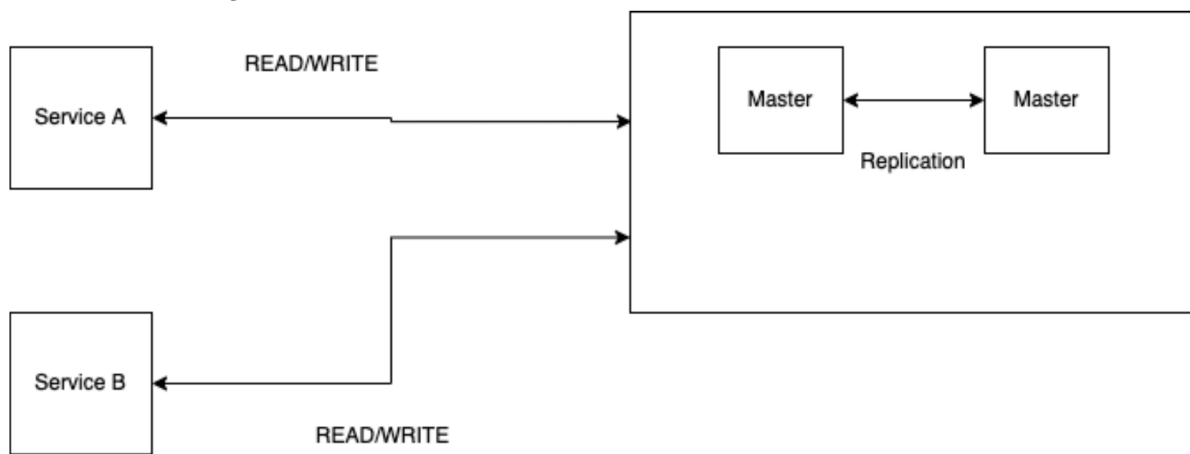SELECT * FROM users, clients
```

- ⦿ Selects everything in the "users" table, then adds columns from the "clients" table.

- ◯ If the "users" table exists, selects everything from there. Otherwise, queries the "clients" table as a fallback.

- ◯ Selects everything in the "users" table, then assigns the "clients" alias.

- ◯ Selects everything in the "users" table, then adds rows from the "clients" table.

Question - 5
MySQL: Space In From Clause

MySQL   Easy

Choose the correct explanation of the next query:
Select all that apply.

```
SELECT * FROM users clients
```

- ◯ Selects everything in the "users" table, then adds columns from the "clients" table.

- ◯ If the "users" table exists, selects everything from there. Otherwise, queries the "clients" table as a fallback.

- ⦿ Selects everything in the "users" table, then assigns the "clients" alias.

- ◯ Selects everything in the "users" table, then adds rows from the "clients" table.

Question - 6
Query Based Question 3

React   Easy

Consider the following code.

```
import React from "react";

class App extends React.Component {
state = {
```

```
    name: "",
    email: "",
    contact: "",
    };

    setValue = (event) => {};

    render() {
    const { name, email, contact } = this.state;
    return (
    <React.Fragment>
            <p>Name = {name}</p>           <p>Email = {email}</p>        {" "}
    <p>Contact = {contact}</p>
            <input name="name" onChange={this.setValue} />
            <input name="email" onChange={this.setValue} />
            <input name="contact" onChange={this.setValue} />      {" "}
    </React.Fragment>
    );
    }
    }

    export default App;
```

There is a common *setValue* function that is used to update all the states on change. Which of the following options provides that functionality?

- ● setValue = (event) => { this.setState({ [event.target.name]: event.target.value }); };

- ○ setValue = (event) => { this.setState({event.target.name: event.target.value }); };

- ○ setValue = (event) => { this.setState({ [event.name]: event.value }); };

- ○ None of the above

Question - 7
Class Component Initial Rendering

React   Class Components   Easy

Consider the following code.

```
import React from "react";

class App extends React.Component {
  constructor(props) {
    super(props);
    this.state = {
      Number: 0
    };
  }

  componentDidMount( ) {
    this.increment()
    this.increment()
    this.increment()
  }

  componentWillUnmount(){
    this.increment()
  }

 increment = () => {
    this.setState({
      Number: this.state.Number + 1
    });
```

```
    };

    render() {
      return (
        <div>
          <p>Number: {this.state.Number}</p>
          <button onClick={this.increment}>Increment</button>
        </div>
      );
    }
  }

  export default App;
```

While first rendered, what is displayed in the *p* tag?

- ○ 0
- ● 1
- ○ 3
- ○ Undefined

Question - 8
React Class Component State

React | Class Components | Easy

What is the output?

```
import React from "react"

class App extends React.Component {
  constructor(props) {
    super(props);
    this.state = { Number: 0 };
  }

  componentDidMount() {
    this.setState({ Number: 1 });
    console.log(this.state.Number);
    this.setState({ Number: 2 });
    console.log(this.state.Number);
    this.setState({ Number: 3 }, () => {
      console.log(this.state.Number);
    });
  }

  render() {
    return <div>{this.state.Number}</div>;
  }
}

  export default App;
```

- ○ 0,0,0
- ○ 1,1,1

○ 1,2,3

◉ 0,0,3

Question - 9
Array Functions

React   Array Functions   Easy

Consider the following code snippet.

```
import React from "react";

function App( ) {
            const data = [ { Name: "Ranjit", Roll: 122 },  { Name: "Ron", Roll: 122 } ];
            const display = () => {
                  let result;
                  return (
                            <div>
                                  <h1>{result.Name}</h1>
                                  <h1>{result.Roll}</h1>
                            </div>
                        );
                      };
              return <div>{display()}</div>;
    }

export default App;
```

Which is the preferred method to initialize the result variable to fetch an object named *Ranjit*?

○ let result= data.map((data) => data.name=="Ranjit");

○ let result= data.filter((data) => data.name=="Ranjit");

◉ let result= data.find((data) => data.name=="Ranjit");

○ None of the above

Question - 10
State Update

React   React Hooks   Functional Components   Easy

Consider the following code.

```
import React, { useState } from "react";

const App = () => {
  const [student, setStudent] = useState({
    Name: "Abc",
    Roll: "123",
    Presence: 0,
  });

  const update = (Presence) => {
  };
```

```
    return (
      <>
        <p>{student.Presence}</p>
        <button onClick={() => update(student.Presence + 1)}>
          Update Student
        </button>
      </>
    );
  };

  export default App;
```

Which option increments the student presence by 1?

○   this.setState({Presence});

○   setStudent(pre=>{...pre,Presence});

●   setStudent({ ...student, Presence });

○   None of the above

Question - 11
Initial Rendering

| React | Easy | Functional Components | State Management |

What is the output of the following code?

```
import React, { useState } from "react";

const App = () => {
  const [number, setNumber] = useState(0);
  console.log(number);//output
  return (
    <>
      <p>{number}</p>
      <button onClick={setNumber((pre) => pre + 1)}>increment</button>
    </>
  );
};

export default App;
```

○   0

○   1

○   undefined

●   Error

Question - 12
Event

| Event Handlers | Easy |

Which React code snippet returns the mouse position?

●

```
useEffect (() => {
        const setFromEvent = (e) => setPosition({ x:
e.clientX, y: e.clientY });
window.addEventListener("mousemove",
setFromEvent);

        return () => {
                window.removeEventListener("mousemove",
setFromEvent);
        };
}, []);
```

○

```
useEffect (() => {
        const setFromEvent = (e) => setPosition({ x:
e.clientX, y: e.clientY });
window.addEventListener("mousemove",
setFromEvent);
}, []);
```

○ Both of the snippets above will provide the functionality required.

○

```
useCallback(() => {
        const setFromEvent = (e) => setPosition({ x:
e.clientX, y: e.clientY });
        window.addEventListener("mousemove",
setFromEvent);

        return () => {
                window.removeEventListener("mousemove",
setFromEvent);
};
}, [])
```

○ None of the above

Question - 13

State Management

SCORE: **5 points**

State Management | Easy

Which change to the following code will cause it to increment *count* every second.

```
function Counter() {
 let [count, setCount] = useState(0);
 useEffect (() => {
  let id=setInterval(() => {
   setCount(count + 1);
 }, 1000);
return () => clearInterval(id);
}, []);
```

```
    return <h1>{count}</h1>;
  }
```

○ Replace line 5 with setCount(++count);

○ Replace line 5 with setCount(prevCount+ 1);

○ Replace line 5 with setCount(count++);

◉ Replace line 5 with setCount(prevCount => prevCount+ 1);

○ None of the above

Question - 14
Components

`Easy`   `Class Components`

This code is part of a React application.

```
const Home = () => {
  const [isLoading, setLoading] = useState(true);
  if(isLoading) {
      return <Loader />;
  }
  useEffect (() => { //fetchData }, []);
}
```

Which of the following statements is correct?

○ The isLoading state has been initialized to TRUE, but it should be FALSE initially.

○ An error will be thrown as the useEffect hook is called conditionally.

◉ The Loader component will always be shown, and the useEffect hook will not be executed.

○ None of the above

Question - 15
MySQL: Search In Specific Range Of Values

`MySQL`   `Easy`

Select the expression with the correct syntax.

◉ SELECT * FROM logs WHERE priority IN ('high', 'medium')

○ SELECT * FROM logs WHERE priority VALUES IN ('high', 'medium')

○ SELECT * FROM logs WHERE priority IN VALUES ('high', 'medium')

○ SELECT * FROM logs WHERE priority IN SET ('high', 'medium')

Question - 16
MySQL: Combining Tables

MySQL   Easy

Select the expressions that cause a MySQL error.

- ○ SELECT * FROM logs l1 JOIN logs l2 ON l1.id = l2.id
- ● SELECT * FROM logs l1 AND FROM logs l2 ON l1.id = l2.id
- ● SELECT * FROM logs l1 UNION logs l2 ON l1.id = l2.id
- ○ SELECT * FROM logs l1 LEFT JOIN logs l2 ON l1.id = l2.id

Question - 17
MySQL: Result Limit Offset

MySQL   Easy

Select the expression with the correct syntax.

- ● SELECT * FROM logs LIMIT 3, 5
- ○ SELECT * FROM logs LIMIT 3 - 5
- ○ SELECT * FROM logs LIMIT 3 TO 5
- ○ SELECT * FROM logs LIMIT 3 FOR 5

Question - 18
MySQL: Rounding Numbers

MySQL   Easy

Choose an expression that returns 0.

- ○ SELECT CEIL(.4)
- ○ SELECT ROUND(.5)
- ● SELECT FLOOR(.6)
- ○ None of the above, all expressions return 1

Question - 19
MySQL: Field Selection

MySQL   Easy

Select the expression that causes a MySQL error.

○ SELECT 1, 2, 3

● SELECT 1 2 3

○ SELECT '1 2 3'

○ None of the above, all expressions are correct

Question - 20
MySQL: Result Set Combine Operator

Easy   MySQL

This operator is used to combine the result set of two or more SELECT statements.

○ FIND_IN_SET

○ GROUP BY

● UNION

○ COMBINE

Question - 21
MySQL: Condition Operators

Easy   Database

Which expression causes a MySQL error?

○ SELECT IF(1 < 2, 'yes', 'no')

○ SELECT IFNULL(NULL, 10)

○ SELECT CASE WHEN 1>0 THEN 'true' ELSE 'false' END

● SELECT IFNOT('true', FALSE)

○ SELECT NULLIF(1, 1)

Question - 22
MySQL: GROUP BY Statement

MySQL   Easy

Select the expression that is not correct.

○ The GROUP BY statement groups rows with the same value into total rows.

○ Aggregate functions (COUNT(), MAX(), MIN(), etc.) can be used only with an explicit GROUP BY statement.

○ You can apply an additional condition after the grouping using the HAVING clause.

○ None of the above, all expressions are correct.

Question - 23
MySQL: Joins

MySQL   Easy

Which expression is not correct?

○ MySQL joins are used to join rows from two or more tables based on the associated column between them.

○ The INNER JOIN keyword selects records that have matching values in both tables.

○ A self-join is just a normal join, but the table joins itself.

● Using the RIGHT JOIN keyword returns only records that are joined in the right way.

Question - 24
MySQL: PRIMARY KEY Constraint

Easy   MySQL

Which expression is not correct?

○ The primary key uniquely identifies each record in the table.

○ The primary key must contain unique values.

● The primary key can contain NULL values, but this is highly undesirable for performance reasons.

○ A table can have only one primary key.

Question - 25
MySQL: NULL Constraint

MySQL   Easy   Constraints

Which of the following SQL CREATE TABLE statements differs from the others in terms of the NULL constraint?

○ CREATE TABLE users (id INT)

○ CREATE TABLE users (id INT NULL)

● CREATE TABLE users (id INT NOT NULL)

○ None of the above, all expressions are the same.

Question - 26
MySQL: Deleting a Table

MySQL   Easy

Select the expression(s) with the correct syntax.

- ⦿ DROP TABLE IF EXISTS users
- ◯ DELETE TABLE IF EXISTS users
- ⦿ DROP TABLE users
- ◯ DESTROY TABLE users

Question - 27
MySQL: Deleting a Database

Easy

Which expression has the correct syntax?

- ◯ REMOVE DATABASE users
- ◯ DELETE DATABASE users
- ⦿ DROP DATABASE users
- ◯ DESTROY DATABASE users

Question - 28
MySQL: Creating a Database

Easy   MySQL

Select the expression with the correct syntax.

- ◯ CREATE DATABASE WITH NAME users
- ◯ CREATE DB WITH NAME users
- ◯ CREATE DB users
- ⦿ CREATE DATABASE users

Question - 29
MySQL: Comment Types

MySQL   Easy

Which of the following are MySQL comments?

- (●) # this is the comment
- (●) -- this is the comment
- (●) /* this is the comment */
- (○) <!-- this is the comment -->

Question - 30
MySQL: Join Type That Left Then Right

MySQL	Easy

Which of these MySQL join types return all records from the left table and the matched records from the right table?
Select all that apply.

- (●) LEFT JOIN
- (○) LEFT INNER JOIN
- (○) LEFT RIGHT JOIN
- (●) LEFT OUTER JOIN

Question - 31
MySQL: String Comparison

MySQL	Easy

Select the expression that causes a MySQL error.

- (○) SELECT * FROM transactions WHERE flag IN('A', 'B', 'C')
- (○) SELECT * FROM transactions WHERE flag BETWEEN 'A' AND 'C'
- (○) SELECT * FROM transactions WHERE flag >= 'A' AND flag <= 'C'
- (●) none of the above, all expressions are correct

Question - 32
MySQL: Like Expression Pattern

MySQL	Easy

Select all ID values that will NOT be matched by the following query
Select all that apply.

```
SELECT id FROM customers WHERE id LIKE '_a%'
```

○ _a%

○ fa23345f-ad73-404d-8988-72f1385e3aeb

○ _a466d3

◉ none of the above, all values will be matched

Question - 33
MySQL: Join Type That Matching Values in Both Tables

MySQL   Easy

Which MySQL join type returns records that have matching values in both tables?
Select all that apply.

○ OUTER JOIN

◉ INNER JOIN

○ CROSS JOIN

○ FULL JOIN

Question - 34
MySQL: Results Limit

MySQL   Easy

Select expressions with correct syntax.

◉ SELECT * FROM customers LIMIT 5 OFFSET 10

○ SELECT * FROM customers LIMIT 5 + 10

○ SELECT * FROM customers LIMIT 5 TO 10

◉ SELECT * FROM customers LIMIT 5, 10

Question - 35
MySQL: Results Order

MySQL   Easy

Select the expression that causes a MySQL error.
Select all that apply.

○ SELECT id, name FROM customers ORDER BY name ASC

○ SELECT id, name FROM customers ORDER BY name

○ SELECT id, name FROM customers ORDER BY 2

○ none of the above, all expressions are correct

Question - 36
MySQL: White Space in Field Alias

SCORE: **5 points**

| MySQL | Easy |

Select the expressions with correct syntax.

⦿ SELECT name AS "customer name" FROM customers

⦿ SELECT name AS 'customer name' FROM customers

⦿ SELECT name AS `customer name` FROM customers

○ SELECT name AS customer\ name FROM customers

Question - 37
MySQL: Join Types

SCORE: **5 points**

| MySQL | Easy |

Which of the following are valid MySQL join types?
Select all that apply.

⦿ LEFT

⦿ CROSS

⦿ RIGHT

○ TOP

Question - 38
React: True statements

SCORE: **5 points**

| React | Front-End Development | Easy |

Which of the following statement(s) is true about ReactJS?

1. Only one root element can be returned per component.
2. Both arguments of the useEffect hook are compulsory.
3. The useState hook returns an object.
4. The useState hook cannot be used outside of a functional component.

⦿ 1

○ 2

○ 3

⦿ 4

Question - 39
React: Route

React   Front-End Development   Router   Easy

```
import React from 'react';
import {BrowserRouter as Router, Switch, Route} from "react-router-dom";
import Home from "./Home";
import About from "./About";

function App() {
  return (
    <Router>
      <Switch>
        <Route path="/" component={Home} />
        <Route path="/about" exact component={About} />
      </Switch>
    </Router>
  )
}

export default App
```

What component will get rendered if the URL is "http://localhost:3000/about"?

- ⦿   <Home />
- ◯   <About />
- ◯   <Home /> <About />
- ◯   No output

Question - 40
React: Children

React   Front-End Development   Props   Easy

What is the output?

```
import React from 'react'

function Test (props) {
  return (
    <div>
      <p>Hello {props.name}</p>
      <p>{props.children}</p>
    </div>
  );
}
export default function App() {
  return (
    <Test name="candidate" children="Frontend">
      <p>Welcome to Hackerrank!</p>
    </Test>
  )
```

```
    }
```

○ Hello candidate
Frontend

◉ Hello candidate
Welcome to Hackerrank!

○ Hello candidate
undefined

○ Error

Question - 41
React: Check statements

`React` `Front-End Development` `Props` `Easy`

```
import React from 'react';
function Sample(props) {
  return (
    <>
    <div>
        <p>{props.name}</p> {/* Statement 1 */}
        <p>{props[designation]}</p> {/* Statement 2 */}
    </div>

     <div>
        <p>{props[0]}</p> {/* Statement 3 */}
        <p>{props['designation']}</p> {/* Statement 4 */}
    </div>
  </>
   )
}
export default Sample;
```

Which of the statement(s) will not generate an error? ('name' and 'designation' are the props passed to the <Sample /> from the App component)

◉ Statement 1

○ Statement 2

◉ Statement 3

◉ Statements 4

Question - 42
React: Welcome

`React` `Front-End Development` `Easy`

```
import React from "react";
function App() {
  return (
    <div>
      <p>Hi</p>
      <p>Welcome to Hackerrank</p>
    </div>
    <div>
      <p>This is a react problem!</p>
    </div>
  );
}
export default App;
```

What is the output of the code snippet?

○   Hi
Welcome to Hackerrank

○   Hi
Welcome to Hackerrank
This is a react problem!

○   This is a react problem!

◉   This code will generate an error.

Question - 43
React: Add class

SCORE: **5 points**

| Front-End Development | React | Classes | Easy |

Which of the following code snippets can be used to dynamically add a class to a tag in ReactJS? Assume all imports and exports are there.
S1:

```
function App() {
  const [state, setState] = useState(false);
  return (
    <div>
      <button onClick={() => setState(!state)}>Click me!</button>
      <h1 className={state && "red-color"}>Hello</h1>
    </div>
  );
}
```

S2:

```
function App() {
  const [state, setState] = useState(false);
  const color = "red-color";
  return (
    <div>
      <button onClick={() => setState(!state)}>Change color</button>
      <h1 className={color}>Hello</h1>
    </div>
  );
}
```

S3:

```
function App() {
  const [state, setState] = useState(false);
  return (
    <div>
    <button onClick={() => setState(!state)}>Click me!</button>
    <h1 className={state ? "red-color": "blue-color"}>Hello</h1>
    </div>
  );
}
```

S4:

```
function App() {
  const [state, setState] = useState(false);
  return (
    <div>
    <button onClick={() => setState(!state)}>Click me!</button>
    <h1 className="red-color">Hello</h1>
    </div>
  );
}
```

- ⦿ S1
- ○ S2
- ⦿ S3
- ○ S4

Question - 44
React: Hooks and Their Applications

React   Hooks   Easy

Match the commonly used React hooks and their applications.

Hook	Application
1. useState	a. Perform side effects on updates
2. useEffect	b. Returns memorized values
3. useContext	c. Used to track state
4. useMemo	d. Manage state globally

- ○ 1.b
    2.c
    3.d
    4.a

- ⦿ 1.c
    2.a
    3.d

4.b

○   1.d
    2.c
    3.a
    4.b

○   1.b
    2.d
    3.a
    4.c

Question - 45
React: Styling in JavaScript

React	CSS3	Easy	Styling React

Select the appropriate option to generate inline styles equivalent to the CSS stylesheet.

```
.my-style{
    background-color: blue;
    color: red;
    font-size: large;
    border: solid 10px black;
}
```

○
```
const MyComponent = () => {
        return (
                <div style="background-color: blue;
                                color:red;
                                font-size:large;
                                border:solid 10px black; ">
                        My CSS Div
                </div>
                )
};
```

○
```
const MyComponent = () => {
        return (
                <div style={background-color: "blue",
                                color:"red",
                                font-size:"large",
                                border:"solid 10px black"}>
                        My CSS Div
                </div>
            )
};
```

◉
```
const MyComponent = () => {
        return (
                <div style={{background-color: "blue",
                                color:"red",
                                fontSize:"large",
                                border: "solid 10px black"}}>
```

```
                    My CSS Div
            </div>
        )
    };
```

```
    const MyComponent = () => {
        return (
            <div style={{'background-color': "blue",
                         'color':"red",
                         'fontSize':"large",
                         'border': "solid 10px black"}>
                    My CSS Div
            </div>
        )
    };
```

Question - 46
React: Valid Routes

SCORE: **5 points**

React | React Router | Routes | Easy

Which route is not valid for this React Router component?

```
<Routes>
      <Route path='/' element={<Home />} />
      <Route path='/user/:id' element={<User />} />
      <Route path='/user/:id/edit' element={<UserEdit />} />
      <Route path='/post/:id' element={<Post />} />
      <Route path='/posts' element={<Posts />} />
</Routes>
```

- ○ /user/1/edit
- ○ /post/10
- ● /post
- ○ /profile/12

Question - 47
React: Components and Routes

SCORE: **5 points**

React | Easy | React Router | Routes

Which component will load when the Route '/signin' is requested from this React Router?

```
<BrowserRouter>
    <Routes>
        <Route path="/" element={<LandingPage />} />
        <Route path="/home" element={<HomePage />} />
```

```
        <Route path="/about" element={<AboutPage />} />
        <Route path="/contact" element={<ContactPage />} />
        <Route path="/login" element={<LoginPage />} />
        <Route path="/signup" element={<SignupPage />} />
        <Route path="*" element={<NotFoundPage />} />
      </Routes>
  </BrowserRouter>
```

- ( ) LoginPage

- ( ) SignupPage

- (●) NotFoundPage

- ( ) HomePage

Question - 48
React: Counter

`React`   `Hooks`   `Easy`

```
const Counter = () => {
        const [number, setNumber] = React.useState(0);
        const incrementNumber = () => {
                setNumber(number + 1);
        };
        React.useEffect(() => setNumber(10), [number]);
        return (
                <div>
                        Count: {number}
                        <button onClick={() => incrementNumber()}>Increment Counter</button>
                </div>
        )
};
export default Counter;
```

The ReactJS Counter component is rendered as shown. The value of *{numberr}* is 10. What will be the value of *{number}* after clicking "Increment Counter" 3 times?

Count: 10

Increment Counter

- ( ) 15

- ( ) 13

- (●) 10

- ( ) 0

React   Easy   Syntax

Which is the functional component that is equivalent to this React Class component?

```
class Hello extends React.Component{
    render(){
        const {name, age} = this.props;
        return(
            <div>
                Hello {name} is {age} years old.
            </div>
        )
    }
}

Hello.propTypes = {
    name: PropTyps.string,
    age: PropTypes.number
}

Hello.defaultProps = {
    name: 'David'
}

export default Hello;
```

◉
```
function Hello({ name = 'David', age }) {
    return (
            <div>
                    <p>Hello {name} is {age} years old</p>
            </div>
        );
}
Hello.propTypes = {
        name: PropTypes.string,
        age: PropTypes.number.isRequired
};
export default Hello;
```

○
```
function Hello({ name, age }) {
    return (
            <div>
                    <p>Hello {name} is {age} years old</p>
            </div>
        );
}
Hello.propTypes = {
        name: PropTypes.string,
        age: PropTypes.number.isRequired
};
export default Hello;
```

○

```
function Hello({ name = 'David', age }) {
        return (
                <div>
                        <p>Hello {name} is {age} years old</p>
                </div>
                )
}
Hello.propTypes = {
        name: PropTypes.string,
        age: PropTypes.number.isRequired
};
export default Hello;
```

○   The Class component cannot be converted into a functional component.

Question - 50
React: States and Props

React | Component State Management | State Management | Easy

Consider these React components as rendered below.
ScoreBoard.js

```
const ScoreBoard = () => {
        const [score, setScore] = React.useState(0);
        const [goal, setGoal] = React.useState(0);

        const newScore = (event) => {
                setScore(score + 1);
                setGoal(goal + 1);
        }
        return (
                <div>
                        <p>Score: {score}</p>
                        <p>Goal: {goal}</p>
                        <ScoreManager newScore={newScore} score={score} goal={goal} />
                </div>
                )
}

export default ScoreBoard;
```

ScoreManager.js

```
const ScoreManager = (props, { score, goal}) => {
        const resetScore = (event) => {
                score = 0
                goal = 0
        }
        return (
                <div>
                        <button onClick={props.newScore}> Add Score </button>
                        <button onClick={resetScore}> Reset Score </button>
                </div>
                )
};
export default ScoreManager;
```

Output:

Score: 0

Goal: 0

[Add Score] [Reset Score]

What will be the values of Score and Goal printed after clicking the 'Add Score' button 5 times and then clicking the 'Reset Score' button

- ⦿ Score: 5
  Goal: 5

- ◯ Score: 0
  Goal: 0

- ◯ Score: 4
  Goal: 4

- ◯ Score: 5
  Goal: 0

Question - 51
React: Events

[React] [EventListener] [Easy]

```
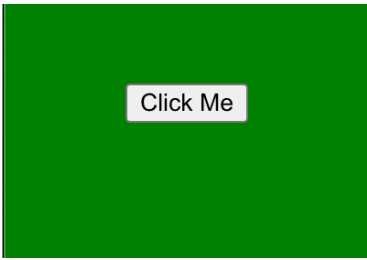import React from 'react';
import PropTypes from 'prop-types';
import './Question2.css';

const GoalComponent = () => {
        const shoot = (message, event) => console.log(message);
        return (
                <div className="Question2">
                        <div className='main-div' onClick={(event) => shoot("No Goal", event)}>
                                <button onClick={(event) => shoot("Goal", event)} >
                                        Click Me
                                </button>
                        </div>
                </div>
        )
}

export default GoalComponent;
```

The given React component renders as shown below.

Click Me

What is logged to the console when "Click Me" is clicked?

- ○ Goal
- ○ No Goal
- ● Goal
  No Goal
- ○ No Goal
  Goal

Question - 52
Render Function

SCORE: **5 points**

Easy | React | React Component Lifecycle

Which of the following functions gets invoked after the render() function when `state` or `props` is updated?

- ○ componentWillMount()
- ○ componentDidMount()
- ○ componentWillReceiveProps()
- ● componentDidUpdate()

Question - 53
Method Search

SCORE: **5 points**

Easy | React | React Component Lifecycle

Which of the following methods is/are invoked when there is an error during rendering in the React lifecycle?

- ○ getDerivedStateFromError()
- ○ componentDidCatch()
- ● Both A and B.
- ○ None of the above

Question - 54
Wrap Code

SCORE: **5 points**

Assuming options state values are given in the constructor, which code should wrap the components that are going to have access to the context inside a class component?

- ● <NotesContext.Provider value={this.state.notes}> //code </NotesContext.Provider>

- ○ <NotesContext value={this.state.notes}> //code </Notes.Provider>

- ○ <NotesContext.Provider value={this.state.notes}> //code <Notes.Provider/>

- ○ <NotesContext.Provider value={this.state.notes}/> //code <Notes.Provider>

Question - 55
Submit

SCORE: **5 points**

Easy   React

What element type does this render?

```
function Music() {
  return <span>Tiesto - Surrounded by Light</span>;
}

ReactDOM.render(<Music/>, document.getElementById('root'));
```

- ○ div
- ● span
- ○ Component
- ○ None above

Question - 56
Hooks

SCORE: **5 points**

Easy   React

Which is the equivalent code using hooks?

```
import React, { Component } from 'react'
export default class SampleComponent extends Component {
  componentDidMount() {
    //
  }
  render() {
    return (<div>Hello</div>)
  }
}
```

○ import React, { useEffect } from 'react'
   const SampleComponent = () => {
    useEffect(() => {
     //
    }, [this]);
    return ('Hello')
   }
   export Component

○ import React, { useEffect } from 'react';
   Default const SampleComponent= () => { Effect(() => { {/.../} }, []); return ('Hello') } export SampleComponent

◉ import React, { useEffect } from 'react';
   const SampleComponent = () => {
      useEffect(() => { // }, []); return ('Hello');
   } export SampleComponent

○ None above

Question - 57

Click 3

Easy   React

What is displayed in H1 when after a user clicks the button 3 times?

```
import React, { useState } from 'react';
export default function App() {
  const [clicked, setClicked] = useState(3);
  return (
    <div className="App">
      <button onClick={() => setClicked((clicked - 1) * 2)}>
        Click Me
      </button>
      <h1>{clicked}</h1>
    </div>
  );
}
```

○ 5

○ 6

○ 14

◉ 10

Question - 58

Science Project

Easy   React

Which of the following is a valid syntax to use the variable inside a component?

```
const SkyColor = "Blue";
```

○ <Uppersky className="Space_Details">${Skycolor}</Uppersky>

○ <Uppersky className="Space_Details"><Skycolor></Skycolor> </Uppersky>

○ <Uppersky className="Space_Details" class="SkyColor"></Uppersky>

⦿ <Uppersky className="Space_Details">{SkyColor}</Uppersky>

Question - 59

Hello

`React` `React Component` `Easy`

What is the output generated by the App component?

App.js

```
import Component from "./Component";
function App() {
  return(
    <>
      <Component title = "Hello"/>
      <Component title = "Everyone"/>
      <Component title = "Good Morning"/>
    </>
  );
}
export default App;
```

Component.js

```
export default function Component(props){
  return(
    <div>
      <h1>{props.title}</h1>
    </div>
  );
}
```

○ Hello
Hello
Hello

⦿ Hello
Everyone
Good Morning

○ This code wouldn't compile

○ Hello
Exception thrown

Question - 60
React State

React   Easy

Which option replaces "//insert code" to update the state of a component multiple times with `newState` function calls?

```
export default class Game extends React.Component{
  constructor(props){
    super(props);
    this.state = { name : "Peter" };
    this.newState = this.newState.bind(this)
  }
  newState(){
    //insert code
  }

}
```

- ○ this.setState="David";

- ○ this.setChangeState({name:"David"})

- ● this.setState({name:"David"})

- ○ Both A and B

Question - 61
Name

React   React Component   Easy

Assuming this component is imported and used on a page, what is its output?

```
import React, { Component } from 'react';
class App extends Component {
  constructor(){
   super();
   this.state={name:"peter"}
  }
  render(){
    return (
      <div>
        {this.state.name}
      </div>
    )
  }
} export default App
```

- ○ This code will not compile.

- ○ Error

Question - 62
Clock

`Easy` `React` `React Component Lifecycle`

This component is used on a page that has a div tag with a root ID. What happens when this code runs?

```
import React from 'react';
import ReactDOM from 'react-dom';
export default class Clock extends React.Component {
  constructor(props){
    super(props);
    this.state = { time : new Date() };
  }
  render(){
    return (
      <div><h1>{ this.props.title } !</h1>
      <h2>{this.state.time}</h2></div>);
  }
}
ReactDOM.render(
  <Clock title="ThisisMyClock" />,
  document.getElementById('root')
);
```

○ {CurrentTimeinFormat}ThisisMyClock is displayed.

● There is a runtime exception.

○ ThisisMyClock{CurrentTimeinFormat} is displayed.

○ None of the above

Question - 63
Leap Year

`Easy` `React`

The parameter *year* is passed as a prop. What code replaces "//CODE HERE" to complete the function?

```
let LeapYear=(props)=>{
 //CODE HERE
 if((year % 4 === 0 && year % 100 !== 0) || year % 400 === 0){
   return <p>{year} is a leap year.</p>
 }else{
   return <p>{year} is not a leap year.</p>
 }
}
export default LeapYear
```

○ let year;

◉ let year = props.year;

○ year = props.year;

○ let props.year;

Question - 64
Attribute Access

Easy   React

Which option will access attributes of the CSS file at "./mystyle.module.css"?

```
.TextDesign {
    colour: Blue;
    padding: 40px;
    font-family: Arial;
    text-align: centre;
}
```

○ import React from 'react';
import ReactDOM from 'react-dom';
import styles from './mystyle.module.css';
class TextColor extends React.Component {
  render() {
    return <h1 className=styles>Hello I am a text!;</h1> }
  }
export default TextColor;

○ import React from 'react';
import ReactDOM from 'react-dom';
import styles from './mystyle.module.css';
class TextColor extends React.Component {
  render() {
    return <h1 id={styles.color}>Hello I am a text!</h1>;
   }
  }
export default TextColor;

○ import React from 'react';
import ReactDOM from 'react-dom';
import styles from './mystyle.module.css';
class TextColor extends React.Component {
  render() {
    return <h1 className={Textdesign.color}>Hello I am a text!</h1>;
   }
  }
export default TextColor;

◉ import React from 'react';
import ReactDOM from 'react-dom';
import styles from './mystyle.module.css';

```
class TextColor extends React.Component {
  render() {
    return <h1 className={styles.TextDesign}>Hello I am a text!</h1>;
  }
}
export default TextColor;
```

Question - 65
Student Result

SQL   Easy

Consider the table below:

Table Student

ID	SCORE
1	2
2	5
3	5
4	6
5	9

How many tuples does the result of the following SQL query contain where result = 'Supplementary'?

```
SELECT id,
    CASE
        WHEN score<=2 THEN 'Fail'
        WHEN score<6 THEN 'Supplementary'
        ELSE 'Distinction'
    END as result
FROM student
```

- ● 2
- ○ 3
- ○ 0
- ○ 1

Question - 66
Common Students

SQL   Easy

Consider the following tables:

Table s1

column	description
id	unique identifier
name	student name

Table s2

column	description
id	unique identifier
name	student name

Which of the following SQL queries will result in students' names common to both tables having the same id, sorted alphabetically? Multiple students can have the same name but their ids will be unique.

- ● select s1.name from s1 INNER JOIN s2 ON s1.id=s2.id ORDER BY s1.name
- ○ select name from s1 OUTER JOIN s2 ON s1.id=s2.id ORDER BY id
- ○ select s1.name from s1 LEFT JOIN s2 ON s1.id=s2.id ORDER BY name
- ○ select name from s1 LEFT JOIN s2 ON s1.id>s2.id

Question - 67
Output Rows

SCORE: **5 points**

`SQL` `Easy`

Consider the following tables:

Table A

ID	Name	Salary
101	John	1500
102	Steve	1500
103	Remo	500
104	Alan	2000
105	Maverick	1000
106	Glen	2000
107	Jacob	2000

Table B

ID	Department
101	Sales
102	Finance

103	Finance
104	HR
105	HR
106	Sales
107	IT

How many tuples does the following SQL query return?

```
SELECT * FROM    (SELECT b.department,
        Avg(a.salary) AS avg_Salary
         FROM   a
               LEFT JOIN b
                      ON a.id = b.id
               GROUP BY b.department) AS C
WHERE   C.avg_salary > 1500
```

- ○ 0
- ○ 1
- ⦿ 2
- ○ 3

Question - 68
Print the Domain Name

`SQL` `Easy` `Database`

The email has the value of an email ID. Fill in the blanks of the following SQL statements so that it prints the domain name. The domain name of nyname@abcd.com is abcd.com.

SELECT SUBSTR (email,INSTR (email,_____)FROM DUAL ;

- ⦿ '@',1)+1)
- ○ '@',1))
- ○ '@',1)-1)
- ○ none of these

Question - 69
Which command?

`SQL` `Easy` `Database`

There are multiple records in a table and some are duplicates. Which command will fetch only one copy of the duplicate records?

○ SELECT DISTINCT

○ SELECT UNIQUE

○ SELECT DIFFERENT

○ All of the above

Question - 70
SQL ROUND

SQL | Easy | Database

The SQL statement

SELECT ROUND(45.926, -2) FROM DUAL ;

○ is illegal

○ prints garbage

○ prints 45.92

● prints 0

Question - 71
Which command is behaving incorrectly?

SQL | Database | Easy

What command should you try if DBMS_OUTPUT.PUT_LINE is not doing what it is supposed to do?

○ SET ECHO ON

○ SET DISPLAY ON

○ SET TERMOUT ON

● SET SERVEROUTPUT ON

Question - 72
SQL Order of Operations

SQL | Easy

Which is the correct order of execution of operations in SQL?

● SELECT, FROM, JOIN, WHERE, GROUP BY, HAVING, ORDER BY

○ SELECT, FROM, GROUP BY, WHERE, HAVING, ORDER BY

○ FROM, GROUP BY, WHERE, ORDER BY, HAVING, SELECT

○ SELECT, FROM, GROUP BY, HAVING, WHERE, ORDER BY

Question - 73
Select Statements

`SQL` `Easy` `Database`

Which of the following SELECT statements prints the string 56? Choose all that apply.

◉ SELECT SUBSTR ('123456',5) FROM DUAL ;

◉ SELECT SUBSTR ('123456',-2) FROM DUAL ;

◉ SELECT SUBSTR ('123456',5,2) FROM DUAL ;

◉ SELECT SUBSTR ('123456',-2,2) FROM DUAL

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