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
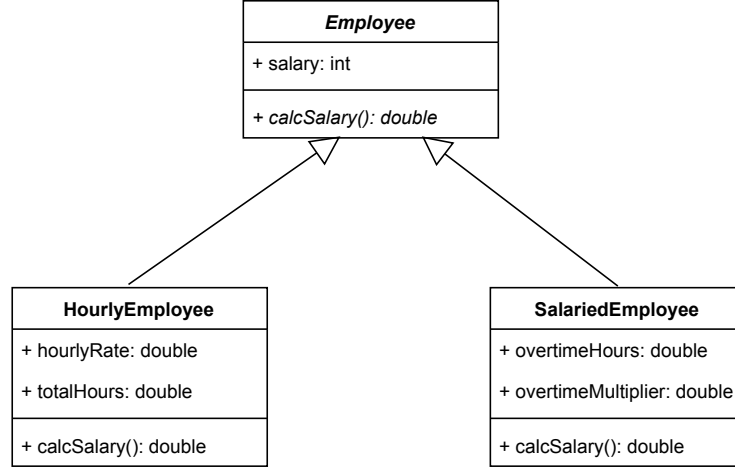**Classes and Objects**

SCORE: **5 points**

classes and objects   Inheritance   Abstract Class   method overriding   Easy

Observe the following class diagram and state

```
                     ┌─────────────────────────┐
                     │       Employee          │
                     ├─────────────────────────┤
                     │ + salary: int           │
                     ├─────────────────────────┤
                     │ + calcSalary(): double  │
                     └─────────────────────────┘
```

HourlyEmployee
+ hourlyRate: double
+ totalHours: double
+ calcSalary(): double

SalariedEmployee
+ overtimeHours: double
+ overtimeMultiplier: 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 - 4
Java Interface

`Interfaces` `Easy`

What is the output of the following program?

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

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

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

```java
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 - 5
Java Operators

SCORE: **5 points**

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 - 6
Java Variables

SCORE: **5 points**

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 - 7
Java Inheritance Overriding

SCORE: **5 points**

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 - 8
Java String Pool

SCORE: **5 points**

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

Question - 9
Which of the following operators is overloaded for string objects?

SCORE: **5 points**

Easy   Java   Polymorphism   Operator Overloading

Which of the following operators is overloaded for string objects?

○ +

○ -

○ ==

○ >>

◉ Java doesn't support operator overloading

Question - 10
Select the correct statement, from the options below:

SCORE: **5 points**

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 - 11
Given the following code, what is the most likely result:

SCORE: **5 points**

Java   OOPS   Programming   Easy

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

```
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 - 12
Bitwise Operators in Java

SCORE: **5 points**

| 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 - 13
JDK Designe Patterns

SCORE: **5 points**

| 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 - 14
Value of k After Function Runs

| Java | OOPS | Easy | Programming |

Which is true of the following program?

```java
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 - 15
Java Types

| Easy | Java |

Which of the following is not a Java primitive type?

◉ String

○ float

○ double

○ int

○ byte

Question - 16
Method Overloading

| Methods | Method overloading | Easy |

```
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 - 17
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 - 18
Java parseInt

SCORE: **5 points**

Exception Handling   Easy

What is the output of the following code?

```
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 - 19
Java Design Pattern

Easy   Design Patterns

The following code represents which design pattern?

```java
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 - 20
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

```java
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 - 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
Interfaces

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 - 24
Will This Compile? 2

Java | Medium | OOPS | Programming

What is the output for the below code ?

```
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 - 25
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 - 26
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 - 27
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 - 28
Which of the following statements is correct? Select the one correct answer.

SCORE: 5 points

Easy   Java

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 - 29
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 - 30
Java: Inner Classes

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 - 31
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 - 32
Which of the following statements is correct?

Application Development   Java   Easy

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 - 33
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 - 34

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

Application Development   Java   Easy

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 - 35

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 - 36

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 - 37

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 - 38
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 - 39
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 - 40
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 - 41
"Syntax Review 2"

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 - 42
Java : Division Check

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 - 43
"Syntax Review 1"

Application Development   Java   Easy

The following code is in a file called Test.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".