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Examination: Odd Semester Examination – 2022

Roll No: _____

Paper: Introduction to Java Programming (BCA SEE521)

TIME: 3 Hours

MAX. MARKS: 75

Note: Follow proper numbering for answering the questions.

SECTION – A (35 Marks) All questions of Section - A are compulsory. Each question is of 1 mark.

Answer these questions in (True/False AND Fill up the blanks):-

1. The Wrapper class for primitive “int” type is _____
2. The range of long data type int in Java is _____
3. A line of code that may throw an un-checked exception must always be surrounded, by a try block.
4. Package in java defines a namespace and also specify fully qualified name of a class.
5. Is it a valid code, Where Employee is an interface and Project is a class?
class Employee implements Project { // Some code here }.
6. The command “run” is used to run(interpret) a java program.
7. Is it a valid code that should compile successfully in java?
float varFloat = new Float(5.6f);
8. All variables in interface are implicitly public, final and static all together.
9. Is it a valid code in java?
Student s1=new Student(); // Assume this line compiles successfully and next line is as below
System.out.println(s1);
10. Scanner class in java is in java.lang package.
11. A static variable in java is also known as an instance variable.
12. We can create an object of an abstract class using the “new” operator.
13. A class declared as final leads to compilation error.
14. We can create an object of an interface using the “new” operator.
15. Is it a valid code in java?

Object obj = new String(“Good morning”);

16. Is this is a valid syntax of for loop in java where "arrPrimitive" is a "long primitive type array reference".

```
for(java.lang.Long varPrimitive : arrPrimitive){  
    System.out.println(varPrimitive);  
}
```

17. Is this is a valid syntax of in java.

```
int [] arr={new Integer(4), new Integer(7), 9};  
for(int i=0; i<arr.length;i++){  
    System.out.println(i); }
```

18. private methods and variable could be accessed only from within the class in java

19. The NullPointerException occurs in java program in the below scenarios –

```
Float fVar=5.0f;
```

```
System.out.println((Integer(fVar)));
```

20. A "try-catch block" must be followed by a "finally block" mandatorily.

Select the right option:-

21. The name of a class(identifier) should be in camel-case as per the java code convention.

22. Which of these constructors call is used to create an empty String object in java?

A. new String();

B. new String("empty");

C. new String(0);

D. new String(char [] "empty");

23. Which of these is an incorrect array declaration?

A. int arr[] = new int[5]

B. int [] arr = new int[5]

C. int arr[] = new int[5]

D. int arr[] = int [5] new

24. Which of these keywords is used to define packages of Java class?

A. import

B. Pkg

C. package

D. Package

25. Which of the following package stores all the standard java classes and do not need an explicit import?

A. lang

B. java

C. util

D. java.packages

26. Which of these keywords is used by a class to make an interface defined previously, super type?

A. import

B. super

C. implements

D. extends

27. Which of the following is not a valid code?

A. `List<String> list = new LinkedList<String>();`

B. `List<String> list = new ArrayList<String>();`

C. `List list = new ArrayList();`

D. `List list = new List();`

28. Which statement is most appropriate. "Java is a -"

A. Compiled language

B. Procedural language

C. Interpreted language

D. Both compiled and Interpreted language

29. What would happen if "String [] args" is not included as an argument in the main method of the class you are trying to run?

A. Program would run successfully

B. Compilation error

C. Program won't run

D. Program would exit and print 0

30. When a non-abstract class implements an abstract, it must mandatorily provide behaviour for

A. two methods declared in that interface

B. none of the methods declared in a interface

C. only one method declared in that interface

D. every method declared in that interface

31. Which of these classes are the direct subclasses of the Throwable class?

A. RuntimeException and Error class

- B. Exception and VirtualMachineError class
- C. Error and Exception class
- D. IOException and VirtualMachineError class

32. `final float pi = 3.14f;`

The above line of code in java means

- A. pi is a floating-point constant
 - B. pi is a floating-point variable
 - C. pi is a non-floating-point constant
 - D. pi is a non-floating-point variable
33. Which one is a valid declaration of a Float in java?

- A. `boolean b1 = 1;`
- B. `boolean b2 = 'false';`
- C. `boolean b3 = false;`
- D. `boolean b4 = 'true'`

34. When does method overloading is determined?

- A. At the run time
- B. At the compile time
- C. At the exception time
- D. At the execution time

35. Classes could be

- A. public,default,protected and private
- B. public,default and protected only
- C. public and default only
- D. public only

SECTION – B (20 Marks)

Attempt any FOUR Questions out of SIX. Each question carries 5 marks.

Question	CO	BL
Q1. Explain constructor overloading with code example.	1	L2
Q2. What happens when a class is declared "final". Explain with suitable example of your choice.	3	L1
Q3. What is inheritance in java? Assume a class "Animal" with methods eat() and move(). Explain inheritance by giving the code of the "Animal" class and of the "Dog" and "Cat" as its derived class. Demonstrate inheritance.	2	L4
Q4. Consider the following code example in Java 1. class Base {	3	L3

```

2.     final public void show() {
3.         System.out.println("Base-show() called");
4.     }
5. }
6. class Derived extends Base {
7.     public void show() {
8.         System.out.println("Derived-show() called");
9.     }
10. }
11. class Demo {
12.     public static void main(String[] args) {
13.         Base b = new Derived();
14.         b.show();
15.     }
16. }

```

Give the output and discuss the reason in detail?

Q5. What is universal super class in java. Explain it's purpose with example?
OR
Explain Listener Interface in detail?

5

L1

Q6. final class Complex {

```

private final double re;
private final double im;

```

```

public Complex(double re, double im) {
    this.re = re;
    this.im = im;
}

```

```

public String toString() {
    return "(" + re + " + " + im + "i";
}
}

```

```

class TestComplex {
    public static void main(String args[])
    {
        Complex c = new Complex(10, 15);
        System.out.println("Complex number is " + c);
    }
}

```

What is the output of the program? Discuss your reason in detail.

4

L5

SECTION – C (20 Marks)

Attempt any TWO Questions out of FOUR. Each question carries 10 marks.

Question	CO	BL
Q1. A. Create a class “Student” that has name, enrolmentNo and address as three fields. Follow encapsulation and data-hiding. B. Create a class TestStudent with the main method that can read the students details and marks from keyboard for any number of student until we type exit on the command prompt. C. Create a class StudentUtil which has a methods as the name given, decide on rest of the method’s signature on your own – printAllStudentsDetail() The method printAllStudentDetails() should print the details of the students along with the marks and should be able to accept both the List ie ArrayList and LinkedList as parameter. Demonstrate use of this method by call from within the main method of TestStudent	2	L6
Q2. Explain the two ways to create a thread in java with code examples.	5	L4
Q3. Differentiate between abstract class and a normal class (concreate class) definition. When would you prefer using an abstract class instead of an interface? Explain with a suitable coding example?	3	L4
Q4. i. Explain how platform-independence in java is achieved. Explain with the help of proper diagram. ii. Give the output of the following code- <pre>public class Test { public static void main(String args[]) { int arr[] = new int[2]; System.out.println(arr[0]); System.out.println(arr[1]); } }</pre>	1	L1