

A10.2-R3: INTRODUCTION TO OBJECT ORIENTED PROGRAMMING THROUGH JAVA

NOTE:

1. There are **TWO PARTS** in this Module/Paper. **PART ONE** contains **FOUR** questions and **PART TWO** contains **FIVE** questions.
2. **PART ONE** is to be answered in the **TEAR-OFF ANSWER SHEET** only, attached to the question paper, as per the instructions contained therein. **PART ONE** is **NOT** to be answered in the answer book.
3. Maximum time allotted for **PART ONE** is **ONE HOUR**. Answer book for **PART TWO** will be supplied at the table when the answer sheet for **PART ONE** is returned. However, candidates, who complete **PART ONE** earlier than one hour, can collect the answer book for **PART TWO** immediately after handing over the answer sheet for **PART ONE**.

TOTAL TIME: 3 HOURS

TOTAL MARKS: 100
(PART ONE – 40; PART TWO – 60)

PART ONE **(Answer all the questions)**

1. **Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the “tear-off” answer sheet attached to the question paper, following instructions therein.** **(1 x 10)**

1.1 Examine the following code:

```
public class LocalTest {
    public static void main(String args[]) {
        int i;
        System.out.println("int i = " + i);
        i=20;
    }
}
```

If you try to compile and run this class, what will happen?

- A) It will compile, but will produce an interpreter error when executed.
- B) It will compile and output '0' to the screen.
- C) It will not compile and will give a compile error.
- D) None of the above.

1.2 Which looping construct are you guaranteed to enter?

- A) while
- B) do-while
- C) for
- D) none of the above

1.3 Which class is base class for all Exception?

- A) String
- B) Error
- C) Throwable
- D) RuntimeException

1.4 What will be the output of this code fragment?

```
StringBuffer b=new StringBuffer("abcdefg");  
b.delete(3,6);  
b.append("hij");  
System.out.println(b.toString());
```

- A) abcghij
- B) abcdefghij
- C) abfghij
- D) abchij

1.5 Which of the following classes directly implement the Set interface?

- A) Vector
- B) LinkedList
- C) HashSet
- D) HashTable

1.6 What value is returned from calling Math.sqrt(0.0)?

- A) 0.0
- B) NaN
- C) ArithmeticException is thrown
- D) A compiler error is generated by calling Math.sqrt(0.0)

1.7 Which class is used for character stream in java.io?

- A) FileOutputStream
- B) ByteArrayOutputStream
- C) FileWriter
- D) PrintStream

1.8 A top level class may have only the following access modifier.

- A) package
- B) friendly
- C) private
- D) public

1.9 Which of the following must match exactly for overloaded methods to compile correctly?

- A) The parameter list
- B) The return type
- C) The method name
- D) None of the above

1.10 What will be printed when the following program is compiled and run?

```
class test {  
    public static void main(String args[]) {  
        int i, j, k, l=0;  
        k = l++;  
        j = ++k;  
        i = j++;  
        System.out.println(i);  
    }  
}
```

- A) 0
- B) 1
- C) 2
- D) 3

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and ENTER in the “tear-off” sheet attached to the question paper, following instructions therein. (1 x 10)

- 2.1 The window, Frame and Dialog classes use a BorderLayout as their default layout manager.
- 2.2 Only an import statement must appear as the first line in a source code file.
- 2.3 The readLine() method returns null when it has reached the end of a file.
- 2.4 A for statement can loop infinitely.
- 2.5 StringBuffer objects are constants.
- 2.6 A class that is declared without any access modifiers is said to have public access.
- 2.7 int and char are the valid data types for the expression in a switch statement.
- 2.8 An interface is a nonfunctional class that can contain constants and method declarations only.
- 2.9 An abstract class may be declared as final.
- 2.10 Applet can not have main method.

3. Match words and phrases in column X with the closest related meaning/ word(s)/phrase(s) in column Y. Enter your selection in the “tear-off” answer sheet attached to the question paper, following instructions therein. (1 x 10)

X		Y	
3.1	The Iterator interface is used to step through	A.	ordered collections of objects.
3.2	Panel is the immediate superclass of	B.	0 to $2^{16} - 1$.
3.3	The range of the short type is	C.	the elements of a Collection.
3.4	The Panel and Applet classes use	D.	to a byte.
3.5	The List interface provides support for	E.	it blocks on I/O.
3.6	A double value can be cast	F.	null.
3.7	The default value of an String type is	G.	the FlowLayout as their default layout.
3.8	A thread enters the waiting state when	H.	objects.
3.9	Wrapped classes are classes that allow primitive types to be accessed as	I.	the String[] type.
3.10	A program's main() method takes an argument of	J.	the Dialog class.
		K.	$-(2^{15})$ to $2^{15} - 1$.
		L.	Applet class.

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Enter your choice in the “tear-off” answer sheet attached to the question paper, following instructions therein. (1 x 10)

A.	digits	B.	keyword	C.	vector
D.	=>> operator	E.	native	F.	= operator
G.	abstract	H.	+ operator	I.	final
J.	set	K.	class	L.	HashTable
M.	runtime	N.	transient	O.	finally

- 4.1 A(n) _____ variable is a variable that may not be serialized.
- 4.2 Any _____ may not be used as the first character of an identifier but they may be used after the first character of an identifier.
- 4.3 The _____ class provides the capability to implement a growable array of objects.
- 4.4 The sizeof operator is not a(n) _____.
- 4.5 The _____ clause is used to provide the capability to execute code, no matter whether or not an exception is thrown or caught.
- 4.6 The purpose of the _____ class is to provide access to the Java runtime system.
- 4.7 The _____ is right associative.
- 4.8 The _____ interface provides methods for accessing the elements of a finite mathematical set.
- 4.9 A(n) _____ method is a method whose implementation is deferred to a subclass.
- 4.10 String can be concatenated with the overloaded _____ operator.

PART TWO
(Answer any **FOUR** questions)

- 5.**
- a) Some of the properties of java make it so attractive from other programming languages. List those properties and describe any two.
 - b) Various modifiers are used in java to declare class, method and variables. Two modifiers are final and static. What does it mean that a class or its member is final?
 - c) Thread is concept in java that provides parallel processing of applications. Explain the life cycle of Java thread. Describe each state briefly.

(7+3+5)

- 6.**
- a) Using event delegation model (used in java 2), is a mechanism for managing and controlling events. What is the advantage of the event-delegation model over the earlier event-inheritance model?
 - b) Various java packages can be found on Internet and also can be developed for our purpose in java. What is a java package and how it is used?
 - c) Using overloading and overriding concept in java we can implement polymorphism feature of OOD. What is the difference between methods overloading and overriding in java? Give example of overriding methods.

(4+4+7)

- 7.**
- a) InputStreamReader and OutputStreamWriter are classes of character stream in java. What is the importance of InputStreamReader and OutputStreamWriter class in java?
 - b) Create a menu-based GUI application using Swing which opens a JFileChooser box and allows user to select an only text file from local hard drives. Display a selected text file name into JTextArea. Handle the events when window is closed. Use Adapter or inner class to handle these events.

(3+12)

- 8.**
- a) What is the purpose of JDBC driver? Explain the different types of JDBC drivers?
 - b) Write a client server program. The client program will request for a random number. The server will respond with random number.

(5+10)

- 9.** Write short notes on any **three** of following:
- a) Java Virtual Machine
 - b) Explain three main concept of Object Oriented Programming
 - c) AppletContext and AppletStub interface
 - d) Exception handling in java

(5x3)