

## B2.52-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) abcg hij
- 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)**