

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 Which of the following assignments is illegal in Java?
 - A) subclass_reference = subclass_object
 - B) subclass_reference = superclass_object
 - C) superclass_reference = subclass_object
 - D) superclass_reference = superclass_object
 - 1.2 What will be the output, if any, of the following code segment?

```
class Min{
    public static void main(String args [ ]) {
        int min = 30;
        min(min, 20, 10);
        System.out.println( Minimum of 10, 20 ad 30 is  + min); }
    static void min(int min, int a, int b) {
        if (a > b)      min = b;
        else           min = a; }
}
```

- A) 10
- B) 20
- C) 30
- D) Program will not compile.

- 1.3 Which of the following line will not compile assuming b1, b2 and b3 are **byte** variables and j is **int** variable?
- A) b1 = 3;
 - B) b3 = b1 * b2;
 - C) b3 = 10 * b1;
 - D) b2 = (byte) j;
- 1.4 Which of the following is a loop construct that will always be executed once?
- A) switch
 - B) for
 - C) while
 - D) do while
- 1.5 Which of the following statements is false?
- A) We cannot create objects of abstract classes.
 - B) The abstract methods of an abstract class must be defined in its subclass.
 - C) Constructors cannot be abstract.
 - D) Static methods can also be abstract.
- 1.6 The exception thrown by the **read()** method of **InputStream** class is
- A) Exception
 - B) FileNotFoundException
 - C) ReadException
 - D) IOException
- 1.7 On invoking **repaint()** method for a **Component**, the method invoked by AWT is
- A) draw()
 - B) show()
 - C) update()
 - D) paint()
- 1.8 A colored image can be converted into a grayscale by using
- A) CroplImageFilter
 - B) RGBImageFilter
 - C) ImageConsumer
 - D) ImageProducer
- 1.9 Which of the following is not a wrapper class?
- A) Vector
 - B) Character
 - C) Boolean
 - D) Integer
- 1.10 The class at the top of the AWT hierarchy is
- A) Component
 - B) Window
 - C) Container
 - D) Frame

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 If **getParameter()** returns NULL, then assigning the return value to a variable of type string may cause an exception to be thrown.
- 2.2 A string object once created cannot be modified.
- 2.3 To ensure controlled access to a shared resource by multiple threads, use serialization.
- 2.4 All the methods in an abstract class must be declared as abstract.
- 2.5 In dynamic method dispatch, the call to overridden methods is resolved at runtime.
- 2.6 The objects **System.out** and **System.in** must be created explicitly by programmers.
- 2.7 It is possible to run garbage collector on demand by calling **gc()** method.
- 2.8 A static method cannot have local variables.
- 2.9 The CODE value in an **<APPLET>** tag must name a class file that is in the same directory as the calling HTML page.
- 2.10 The **InetAddress** class is used to encapsulate both the numerical IP address and the domain name for that address.

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	
	Clubbing data and methods together		Packages
	Java Interpreter		Media Tracker
	Short Circuit AND		Container
	Mechanism for organizing large programs		Delegation Event Model
	Root of character stream classes		Text Area
	A blank and semantic free window		Inner class
	Managing multiple images		Data hiding
	Event handling mechanism		Bytecode
	Class within another class		Canvas
	Scrollable component to enter text		JVM
			Text field
			Subclass
			&&
			Reader
			Encapsulation
			&
			InputStream

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.	JApplet	B.	s1.length	C.	flow
D.	public	E.	Boolean	F.	float
G.	ASCII	H.	throw	I.	init()
J.	s1.length()	K.	finalize()	L.	Unicode
M.	Float	N.	card	O.	update()
P.	ServerSocket	Q.	border	R.	URL
S.	run()	T.	private	U.	Throws
V.	grid	W.	start()	X.	Applet

- 4.1 An object of _____ class can have **POSITIVE_INFINITY** as a valid value.
- 4.2 Java uses _____ character set.
- 4.3 The length of a **String** object, s1, can be obtained using the expression _____.
- 4.4 The _____ method is called just before garbage collection.
- 4.5 To rethrow an exception use _____ keyword.
- 4.6 The implementation of an interface method must be declared as _____.
- 4.7 First method called when an applet begins execution is _____.
- 4.8 _____ is the fundamental class of Java Swing.
- 4.9 The _____ class is used to specify the address of a resource on the Internet.
- 4.10 A(n) _____ layout manager arranges components in rows and columns form.

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

- 5.**
- a) Write a Java program to read in two matrices from the keyboard and compute their sum. Overload **toString()** method to display the result matrix in row and column form.
 - b) Differentiate between the following:
 - i) static and instance members of a class
 - ii) method overloading and method overriding
- (10+5)**
- 6.**
- a) Write a Java program "FileCompare.java" to compare the contents of two files and display the message "Same" if the contents of the two files are same and "Different" otherwise. The names of the files are to be passed to the program through the command line arguments. Also write the command to invoke the program.
 - b) What do you understand by dynamic method dispatch? Explain with the help of an example.
- (9+6)**
- 7.** Design an applet to display three buttons "Red", "Green" and "Blue". The color of the background changes according to the button pressed by the user. Also, write the HTML code to display the applet.
- (15)**
- 8.**
- a) Write a Java program to create a thread that displays odd numbers starting from 1 to 100.
 - b) Write a Java program to sort an array of strings entered through the keyboard.
- (7+8)**
- 9.** Write short notes on **any three** of the following:
- i) Exception Handling
 - ii) Packages
 - iii) Java Database Connectivity
 - iv) Interface versus classes
- (5x3)**