

A10.1-R4: 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.** **(1x10)**
 - 1.1 _____ class of java.util package supports Internationalization
 - A) TimeZone
 - B) Currency
 - C) Locale
 - D) Calendar
 - 1.2 Which one of the following is not an AWT listener interface?
 - A) ActionEvent
 - B) KeyListener
 - C) FocusListener
 - D) WindowListener
 - 1.3 Which one of the following is the correct syntax for suggesting that the JVM performs garbage collection?
 - A) System.free();
 - B) System.setGarbageCollection();
 - C) System.out.gc();
 - D) System.gc();
 - 1.4 What is the purpose of method parseDouble defined in Double class?
 - A) The method is used to convert String to Double class, assuming that the String represents a double.
 - B) The method converts the Double object to a String.
 - C) The method is used to convert String to a double assuming that the String represents a double.
 - D) The method converts a double to a String.

- 1.5 In the following jar command `jar cvf jarFileName *.class*.gif`, the option `v` is used to _____
- A) update an existing jar file.
 - B) verifies the jar file for the specified *class* and *gif* files.
 - C) generates verbose output.
 - D) displays the table of contents.
- 1.6 In Java, the collection of methods with no implementation is called _____
- A) an interface
 - B) a static class
 - C) a package
 - D) none of the above
- 1.7 _____ is used internally to initialize objects when no constructor is explicitly mentioned
- A) A default constructor
 - B) An assignment operator
 - C) A parameterized constructor
 - a) A copy constructor
- 1.8 The purpose of **USE Case** diagram of UML is _____
- A) Structure and connections of components.
 - B) Deployment of artifacts to nodes.
 - C) Procedural and parallel behavior.
 - D) How users interact with a system.
- 1.9 `int values[] = {1,2,3,4,5,6,7,8};`
`for(int i=0;i< X; ++i)`
`System.out.println(values[i]);`
 Referring to the above, what value for X will print from all members of array "values"?
- A) 1
 - B) 7
 - C) 8
 - D) None of the above
- 1.10 Which code segment would execute the stored procedure "calculateSal()" located in a database server?
- A) `Statement stmt = connection.createStatement();`
`stmt.execute("CALCULATESAL()");`
 - B) `CallableStatement cs = con.prepareCall("{call calculateSal }");`
`cs.executeQuery();`
 - C) `StoreProcedureStatement spstmt = connection.createStoreProcedure("calculateSal()");`
`spstmt.executeQuery();`
 - D) `PreparedStatement pstmt = connection.prepareStatement("calculateSal()");`
`pstmt.execute();`
 - E) `Statement stmt = connection.createStatement();`
`stmt.executeStoredprocedure("calculateSal()");`

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. (1x10)

- 2.1 JFrame is a parent class of a JPanel.
- 2.2 The entry point of every application in java is its main() method.
- 2.3 The ArrayList class provides the capability to implement a growable array of object.
- 2.4 In java, Object class is the root of class hierarchy.
- 2.5 The destroy() method of a JApplet is called more than once in its life cycle.
- 2.6 Assertions are a commonly used idiom for defensive programming.
- 2.7 The JButton object can be created with text and icon.
- 2.8 When using the GridBagLayout manager, each new component requires a new instance of the GridBagConstraints class.
- 2.9 The combination of name, return type and order of arguments is termed as signature of method.
- 2.10 UML Sequence diagram is one form of interaction diagram.

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. (1x10)

| X | | Y | |
|------|---|----|-----------------------------------|
| 3.1 | javax.swing package | A. | Graphics2D |
| 3.2 | In Object Oriented Programming, each package represents a | B. | paintComponent() |
| 3.3 | Array in Java | C. | drawPaint() |
| 3.4 | A method used to paint graphics in a JApplet | D. | Shape |
| 3.5 | A class for rendering 2-dimensional shapes, text and images | E. | is a set of lightweight component |
| 3.6 | An object which generates an event is known as | F. | MVC |
| 3.7 | The architecture of swing component | G. | Source Object |
| 3.8 | An object which registers itself for receiving an event. | H. | Listener Object |
| 3.9 | Generalization | I. | association |
| 3.10 | Aggregation | J. | is an object |
| | | K. | namespace. |
| | | L. | is a relationship |
| | | M. | interaction |

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. (1x10)

| | | | | | |
|-----------|--------------------|-----------|----------------------|-----------|-------------------------|
| A. | IOException static | B. | InvalidMarkException | C. | final |
| D. | javap | E. | default | F. | ResultSet |
| G. | private | H. | FlowLayout | I. | PreparedStatement |
| J. | reference | K. | SQLException | L. | ReadOnlyBufferException |
| M. | objects | | | | |

- 4.1 A class declared as _____ cannot be inherited.
- 4.2 An object is implicitly passed to a method by _____.
- 4.3 The class variable is also called as a(n) _____ variable.
- 4.4 getNextException method belongs to _____ class.
- 4.5 The object of _____ class is thrown when an attempt is made to reset a buffer when its mark is not defined.
- 4.6 The jdk development tool which is used as a class file disassembler is known as _____.
- 4.7 A SQL statement is precompiled and stored in a _____ object.
- 4.8 _____ is the default access modifier for instance variables in Java.
- 4.9 UML depicts information systems as a collection of _____.
- 4.10 The default layout manager of a JPanel container is _____.

PART TWO

(Answer any **FOUR** questions)

- 5.**
- a) What are Wrapper classes? Explain in detail.
 - b) What is a package? Explain the steps for creating user defined package.
 - c) Briefly discuss Abstraction and Encapsulation in Object Oriented Programming.
- (5+5+5)**
- 6.**
- a) Write a short note on following UML diagrams
 - i) Component diagram
 - ii) Deployment diagram
 - b) Write a short note on java.nio.ByteBuffer class.
 - c) What do you mean by static and dynamic typed languages? Explain in brief.
- (5+5+5)**
- 7.**
- a) What is an exception? Describe exception handling mechanism with example.
 - b) What is JDBC? Write the basic steps required to connect and process the data from a database using JDBC.
 - c) What is inheritance? Write the important benefits of Inheritance.
- (5+5+5)**
- 8.**
- a) Explain static and dynamic method binding?
 - b) What is the UML Sequence diagram? Explain it with suitable example?
 - c) List the features provided by Swing for developing GUI Application and discuss the Swing JTextField and JLabel components.
- (5+5+5)**
- 9.**
- a) What is an Applet? Discuss the applet HTML tag with its required attributes with an example.
 - b) What is the UML? What is its use?
 - c) What is a Layout Manager? Explain the following layout managers:
 - i) BorderLayout
 - ii) GridLayout
 - iii) FlowLayout
- (5+5+5)**