

KATHMANDU UNIVERSITY
End Semester Examination
June/July, 2023

Marks Scored:

Level : B.E.

Year : III

Course : GEOM 319

Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date

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SECTION "A"

[20Q. × 0.5 = 10 marks]

Encircle the most appropriate alternative from each set of choices.

1. Java Virtual Machine consists of _____.
a. Class loader and HotSpot Compiler b. Java Compiler and HotSpot Compiler
c. Java Compiler and Runtime System d. HotSpot Compiler and Runtime System
2. For really large numbers, we use _____ in Java.
a. bigInteger and bigDecimal classes
b. BigInteger and BigDecimal classes
c. LargeInteger and LargeDecimal classes
d. largeInteger and largeDecimal interfaces
3. The _____ keyword is used to derive a class from a superclass. The _____ keyword is used to declare classes that define common properties and behavior of other classes.
a. extend, friend b. abstract, extends
c. extends, abstract d. implements, static
4. The output of the following program will be _____.

```
class variable_scope
{
    public static void main(String args[])
    {
        int x;
        x = 5;
        {
            int y = 6;
            System.out.print(x + " " + y);
        }
        System.out.println(x + " " + y);
    }
}
```

- a. Compilation error
- b. Runtime error
- c. 5 6 5 6
- d. 5 6 5

5. Which one of the following is supported in Java?
 - a. function pointers
 - b. struct
 - c. union
 - d. Labeled break
6. _____ keyword is used for the block to be examined for exceptions.
 - a. Check
 - b. throw
 - c. catch
 - d. try
7. If an expression contains double, int, float, long, then the result of the expression will be _____.
 - a. double
 - b. float
 - c. int
 - d. long
8. _____ can be used to obtain the coordinates of a mouse.
 - a. getCoordinates()
 - b. getMouseCoordinates()
 - c. getMouseXY()
 - d. getPoint()
9. _____ is superclass of WindowEvent class.
 - a. Focus Event
 - b. ComponentEvent
 - c. InputEvent
 - d. ItemEvent
10. _____ is characteristics of using JDBC connection pool.
 - a. Consuming less memory
 - b. Consuming more memory
 - c. High performance
 - d. Slow performance
11. What does setAutoCommit(false) do?
 - a. Commits transaction after each query
 - b. Explicitly commits transaction
 - c. Does not commit transaction automatically after each query
 - d. Never commits transaction
12. Which of the following type of variable can be defined in an interface?
 - a. private final
 - b. public static
 - c. public final
 - d. static final
13. What happens when a java program having a constructor in an interface is compiled/run?
 - a. Compilation failure
 - b. Runtime Exception
 - c. Compiles successfully
 - d. The implementing class will throw exception
14. _____ contains classes that help in connecting to a database.
 - a. sql.java
 - b. mysql.java
 - c. java.sql
 - d. java.MySQL
15. Which of the following applet tags is legal to embed an applet class named "MyApplet" into a webpage?
 - a. `<applet class= MyApplet width=400 height=300></applet>`
 - b. `<applet> code= MyApplet.class width=400 height=300</applet>`
 - c. `<applet code= MyApplet.class width=400 height=300></applet>`
 - d. `<applet param= MyApplet.class width=400 height=300></applet>`

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16. The _____ method is called every time the applet receives focus as a result of scrolling in the active window.
a. init() b. start() c. stop() d. destroy()
17. An applet is a Java class that extends the _____ class.
a. java.Applet b. javax.Applet c. Applet d. java.applet.Applet
18. Which of the following statement is **CORRECT**?
a. g.drawString(x-coordinate, y-coordinate, text);
b. g.drawString(y-coordinate, x-coordinate, text);
c. g.drawString(text, x-coordinate, y-coordinate);
d. g.drawString(text, y-coordinate, x-coordinate);
19. Which of the following is a **CORRECT** interface?
a. abstract interface A { abstract void print(); { } }
b. abstract interface A { print(); }
c. interface A { void print() { } }
d. interface A { void print(); }
20. What is the output of the following program?

```
class Main
{
    public static void main(String args[])
    {
        try
        {
            System.out.print("Hello" + " " + 1 / 0);
        }
        catch(ArithmeticException e)
        {
            System.out.print("World");
        }
    }
}
```

- a. Hello b. World c. HelloWorld d. Hello World

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SECTION "B"

[6Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. What is labeled break? Describe with a necessary Java program.
2. What happens when a default constructor is called but only parameterized constructors have been defined? Exemplify with relevant code extracts.
3. Describe protected access modifier with an example code snippets.
4. Briefly explain displaying 2D shapes with necessary code snippets.
5. Illustrate event delegation model with an example.
6. Can an overriding method in subclass throw more exceptions than corresponding method in superclass? Justify and illustrate with an example.
7. When is an Adapter class useful? Illustrate with relevant code extracts.

SECTION "C"

[2Q. × 8 = 16 marks]

Attempt *ALL* questions. Assume suitable data when necessary.

8. Write a Java program that defines a class "Farmer" having ID, Name, Farm Area and location as instance fields. The class should have appropriate constructors and methods to initialize, modify, and read fields values. Test your program by reading the values of 5 farmers from user. The program should also search farmers based on the ID field.
9. Describe the differences between getKeyCode() and getKeyChar(). Write a program that connects to a PostgreSQL database and display database metadata. [3 + 5]