

KATHMANDU UNIVERSITY  
End Semester Examination [C]  
December, 2024

Mark Scored :

Level : B. E.

Year : III

Exam Roll No. :

Time: 30 mins.

Course : GEOM 319

Semester : II

F. M. : 10

Registration No.:

Date **17 DEC 2024**

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose the most appropriate answer from the given choices.

- The purpose of the PATH environment variable is to \_\_\_\_\_  
a. find Java libraries  
b. find the Java compiler  
c. improve Java code  
d. store Java bytecode
- \_\_\_\_\_ is the range of the short data type in Java.  
a. -2147483648 to 2147483647  
b. -32768 to 32767  
c. -128 to 127  
d. 0 to 65535
- \_\_\_\_\_ is not a feature of Java.  
a. Compiled  
b. Interpreted language  
c. Object-oriented  
d. Platform-independent
- \_\_\_\_\_ converts an object to a string.  
a. createString()    b. newString()    c. object.string()    d. toString()
- What is the output of the following program?

```
public class Test
{
    public static void main(String arg[])
    {
        int x;
        for (x = 1; x <= 10; x += 2)
        {
            if (x == 6)
            {
                System.out.println(x);
                break;
            }
        }
    }
}
```

- a. 1                      b. 6                      c. 13579                      d. No output

6. The *Comparable* interface contains \_\_\_\_\_ method.  
 a. compare()      b. compareTo()      c. toCompare()      d. compareWith()
7. Method overloading means having \_\_\_\_\_ number of methods with the same name but different argument lists.  
 a. exactly two      b. exactly three      c. more than zero      d. more than one
8. \_\_\_\_\_ is NOT a benefit of using inheritance in Java?  
 a. Code reuse      b. Encapsulation  
 c. Method Overloading      d. Polymorphism

9. What is the output of the following program?

```
public class RecursionTest
{
    public static int number = 5;
    public static void main(String args[])
    {
        new RecursionTest().recursiveMethod();
    }

    public void recursiveMethod()
    {
        number--;
        if (number == 0)
            return;
        System.out.print(number + " ");
        recursiveMethod();
    }
}
```

- a. 5 4 3 2 1      b. 4 3 2 1      c. 4 3 2 1 0      d. Compiler error
10. The *super* keyword is used to access the instance of \_\_\_\_\_  
 a. child classes      b. friend class      c. the parent class      d. the same class
11. What is the error in the following SQL?  
*CREATE TABLE Books (BookID INT, Price DECIMAL(5), Author VARCHAR(40));*  
 a. The Author should be CHAR(40)      b. The BookID should be a TEXT  
 c. The BookID should be VARCHAR      d. The DECIMAL definition is incomplete
12. \_\_\_\_\_ method drops all changes made since the previous commit?  
 a. public Statement createStatement()      b. public void commit()  
 c. public void close()      d. public void rollback()
13. Runnable is a/an \_\_\_\_\_  
 a. Abstract class      b. Class      c. Interface      d. Method

14. \_\_\_\_\_ is used to generate the application's top-level window?  
a. JButton                      b. JComboBox                      c. JFrame                      d. JPanel
15. When is a *finally* block executed in Java?  
a. An exception has occurred                      b. Executed at first  
c. Executed at last                      d. Try block is executed without any exception
16. What is garbage collection in Java?  
a. Any unused package in a program automatically gets deleted  
b. Deletes all unused Java files on the system  
c. Memory used by the object with no reference is automatically reclaimed  
d. The JVM cleans the output of the Java program with an error
17. \_\_\_\_\_ is used for handling button click events.  
a. ActionListener                      b. ItemListener                      c. KeyListener                      d. MouseListener
18. The `setResizable()` method in `JFrame` is used to \_\_\_\_\_  
a. close the frame  
b. make the frame resizable or non-resizable  
c. set the size of the frame  
d. set the title of the frame
19. Pick the correct statement.  
a. `new Rectangle2D.Double(leftX, topY, width, height);`  
b. `new Rectangle2D.Double(width, height, leftX, topY);`  
c. `new Graphics2D.drawRect(leftX, topY, width, height);`  
d. `new Graphics.setColor(color.Magenta);`
20. \_\_\_\_\_ can be used in an applet to output a string.  
a. `display()`                      b. `drawString()`                      c. `transient()`                      d. `print()`



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SECTION "B"

[6 Q. × 4 = 24 marks]

Attempt *ANY SIX* questions. *Assume suitable data where necessary.*

1. Shortly describe any four advantages of Java according to the Java White paper. [4]
2. Java compiler requires initialization of local variables before use but instance variables of class are automatically initialized. Describe with example codes. [4]
3. How can parent class constructors be called? Demonstrate with example program codes. [4]
4. Why is the interface a necessity? Compare interface with abstract class. [1 + 3]
5. Write a Java program to demonstrate the displaying of different shapes. [4]
6. Write a Java program that updates the price of all books by 10%. The program should display the original and updated prices. [4]
7. Explain try-catch-finally with the help of a flowchart and Java codes. [4]

SECTION "C"

[2Q × 8 = 16 marks]

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

8. What is a tagging interface? Describe the cloning process with an example Java program. [2+6]
9. Shortly describe init() and stop() methods of applet. Write a Java program to handle Key events. [2+6]

