

KATHMANDU UNIVERSITY  
End Semester Examination  
May/June, 2022

Marks scored:

Level : B.E.

Year : III

Course : GEOM 319

Semester : II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No.:

Date :

SECTION "A"

[20Q. × 0.5 = 10 marks]

Encircle the most appropriate answer from the given choices.

- The number of primitive data types in Java is \_\_\_\_\_.  
a. 6                      b. 7                      c. 8                      d. 9
- Automatic type conversion is possible for \_\_\_\_\_.  
a. byte to int              b. int to long              c. long to int              d. string to int
- The output of the following program will be \_\_\_\_\_.  

```
public class Solution{  
    public static void main (String[] arguments){  
        short x = 10;  
        x = x * 5;  
        System.out.print(x);  
    }  
}
```

  
a. 10                      b. 50                      c. Exception              d. Compiler error
- A package in Java is a collection of \_\_\_\_\_.  
a. applets                      b. classes                      c. interfaces              d. classes and interfaces
- \_\_\_\_\_ keyword makes a variable belong to a class, rather than being defined for each instance of the class.  
a. abstract                      b. final                      c. static                      d. public
- \_\_\_\_\_ cannot be used for a constructor.  
a. private                      b. protected                      c. public                      d. static
- The finalize() method is called \_\_\_\_\_.  
a. zero or one time              b. more than one times  
c. at least one time              d. one or more times
- In a Multi-Level Inheritance in Java, the last subclass inherits methods and properties of \_\_\_\_\_.  
a. the immediate parent class              b. the immediate 2 classes above it  
c. the immediate 5 classes above it              d. all classes above it

9. An abstract class in Java usually contains one or more abstract \_\_\_\_\_.
- constructors
  - methods
  - variables
  - destructors
10. \_\_\_\_\_ is the superclass in Java that bundles all classes to deal with exceptions and errors?
- Error
  - Exception
  - Throw
  - Throwable
11. What is the output of the following Java code?
- ```
public class ExceptionTest
{
    public static void main (String[] args)
    {
        try
        {
            int ax=9, bx=0;
            int cx = ax/bx;
            System.out.print("Exception occurred.");
        }
        catch (Exception e)
        {
            System.out.println("Catching an Exception.");
        }
    }
}
```
- Exception occurred. Catching an Exception.
  - Exception occurred.
  - Catching an Exception.
  - Compiler error.
12. Which is the correct way of converting an int value to an Integer?
- Integer in = new Integer(9);
  - Integer in = Integer.valueOf(9);
  - Integer in = new Integer("9");
  - Integer in = new Integer('9');
13. When a Java program is executed once, you can pass data using the Command-line arguments \_\_\_\_\_ time(s)?
- 0
  - 1
  - 5
  - 10
14. When an array is passed to a method, what does the method receive?
- A copy of the array passed to the method
  - The reference of the array
  - The first element of the array
  - Array length
15. Which of the following option leads to the portability and security of Java?
- Bytecode is executed by JVM
  - The applet makes the Java code secure and portable
  - Use of exception handling
  - Dynamic binding between objects

16. Which option is false about the final keyword?
- a. A final method cannot be overridden in its subclasses.
  - b. A final class cannot be extended.
  - c. A final class cannot extend other classes.
  - d. A final method can be inherited.
17. JDBC classes are defined in \_\_\_\_\_ packages?
- a. jdbc and javax.jdbc
  - b. rdb and javax.rdb
  - c. jdbc and java.jdbc.sql
  - d. sql and javax.sql
18. Which is the container that does not contain a title bar and menu bars but can have other components like buttons, text fields, etc.?
- a. Window
  - b. Frame
  - c. Panel
  - d. Container
19. Which package provides many event classes and listener interfaces for event handling?
- a. java.awt
  - b. java.awt.component
  - c. java.awt.Graphics
  - d. java.awt.event
20. Which of the following method is used to perform data manipulation statements in JDBC?
- a. executeResult()
  - b. executeQuery()
  - c. execute()
  - d. executeUpdate()



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SECTION "B"  
[6Q. × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. What is the role of JVM? Describe with a necessary diagram. [2 + 2]
2. Describe legal conversions between numeric types with necessary figure and code snippet.
3. How can static and non-static fields be initialized? Explain with the necessary code snippets.
4. How can subclass and superclass objects be counted separately? Demonstrate with a Java program.
5. How is different types of exceptions can be dealt specifically? Demonstrate with an example program.
6. Describe the cloning process in Java with necessary examples.
7. Explain the applet lifecycle with a suitable diagram. Why are applets treated as insured? [3 + 1]

SECTION "C"  
[2Q. × 8 = 16 marks]

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

8. Write a Java program to test whether a line is inside a polygon. Your program must get the coordinates of the geometries from the user. Also, display the geometries using the appropriate GUI.
9. Write a Java program to update the population (male, female, total) of each ward of the municipalities as per the preliminary census data recently published by the CBS. The program should display the total male and female populations of all the municipalities. The program should read the database name and authentication details from a configuration file.

