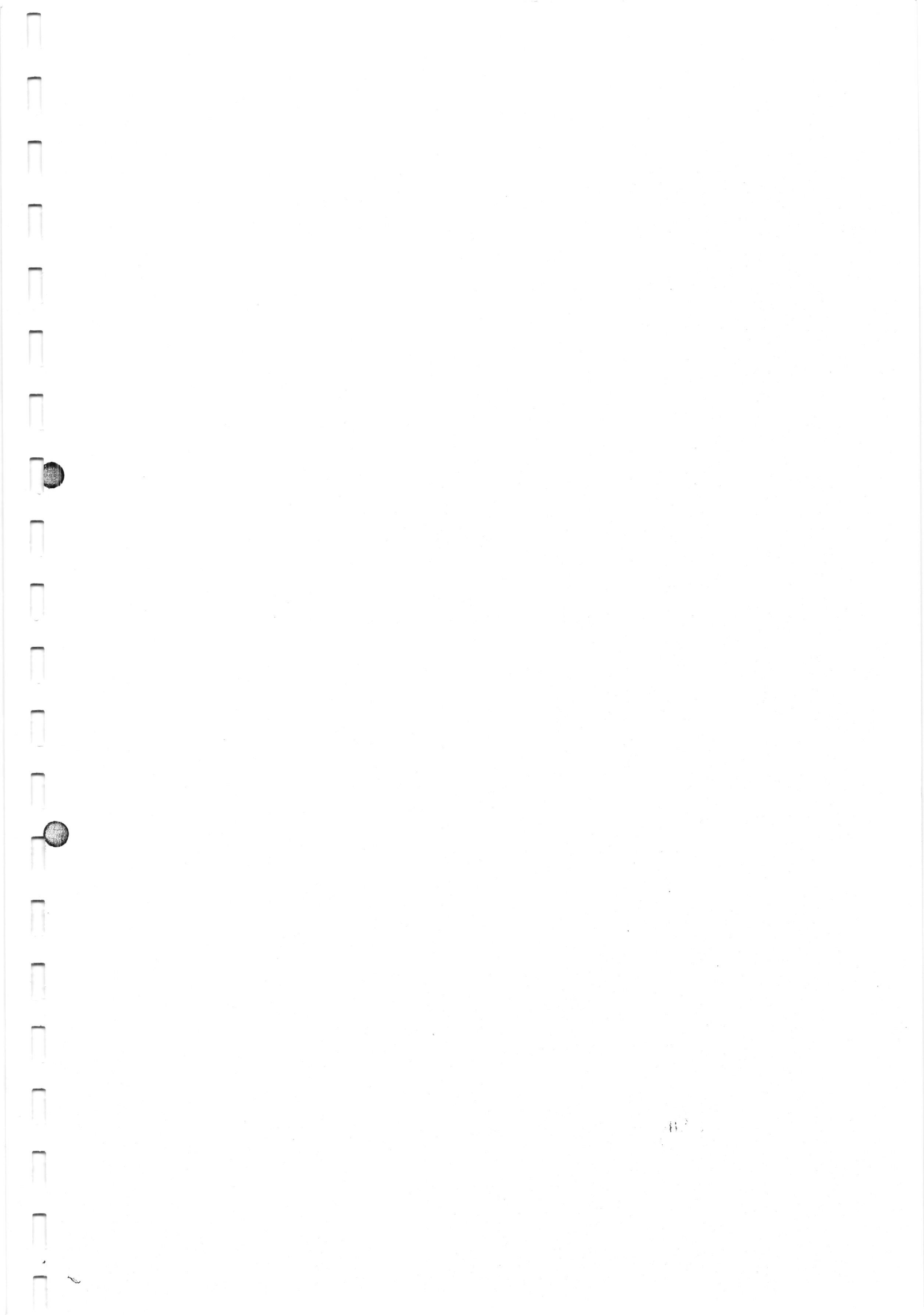


6. A protected member cannot be accessed from _____.
- a) a subclass of the same package
 - b) a non-subclass of the same package
 - c) a non-subclass of different package
 - d) a subclass of different package
7. What is garbage collection in the context of Java?
- a) The operating system periodically deletes all the java files available on the system.
 - b) When all references to an object are gone, the memory used by the object is automatically reclaimed.
 - c) Any package imported in a program and not used is automatically deleted.
 - d) The JVM checks the output of any Java program and deletes anything that doesn't make sense.
8. Which of the following is TRUE?
- a) In Java, an instance field declared public generates a compilation error.
 - b) int is the name of a class available in the package java.lang
 - c) Instance variable names may only contain letters and digits.
 - d) A class has always a constructor (possibly automatically supplied by the java compiler).
9. What is the length of the application box made by this program?
- ```
import java.awt.*;
import java.applet.*;
public class MyApplet extends Applet {
 Graphic g;
 g.drawString("A Simple Applet", 20, 20);
}
```
- a) Compilation Error
  - b) Runtime Error
  - c) Default value
  - d) 20
10. Which of the following applet tags is legal to embed an applet class named Test into a Web page?
- a) < applet class = Test width = 200 height = 100>
  - b) < applet> code = Test.class width = 200 height = 100>
  - c) < appletcode = Test.class width = 200 height = 100>
  - d) < appletparam = Test.class width = 200 height = 100>
11. What is the output of the following code?
- ```
public class EqualityTest
{
    public static void main(String args[])
    {
        String s1 = "Hello";
        String s2 = new String(s1);
        System.out.println(s1==s2);
    }
}
```
- a) true
 - b) false
 - c) 0
 - d) 1



KATHMANDU UNIVERSITY
End Semester Examination
August, 2018

AUG 15 2018

Level : B. E.
Year : III
Time : 2 hrs. 30 mins.

Course : GEOM 319
Semester : II
F. M. : 40

SECTION "B"
[6Q × 4 = 24 marks]

Attempt *ANY SIX* questions.

1. Explain working of Java Virtual Machine with necessary diagram. [4]
2. Write a Java program that counts the number of objects of super-class and sub-class separately. [4]
3. Explain labeled break with the help of a Java program. [4]
4. How can a subclass constructor call a super class constructor in Java? Explain with necessary code. What will happen if the called constructor does not exist in the super class? [3+1]
5. Explain shallow copy and deep copy with necessary examples. Why does a class using clone() method need to implement cloneable interface? [2+2]
6. Illustrate checked and unchecked exceptions in Java with necessary code snippet. [4]
7. Write short notes on: [2+2]
 - a. append() and capacity() methods of String class
 - b. Displaying various shapes

SECTION "C"
[2Q × 8 = 16 marks]

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

8. Write a Java program that asks the user to input necessary data for level surveying (e.g. number of stations, reference level, and backsight and foresight readings of each station) and calculates rise/fall as well as the elevation of each station. The results should be displayed in tabular format. The rise/fall value should be displayed with red color while the rest of the values/text in black color. [8]
9. Briefly explain methods of KeyListener. A municipality has a database of buildings which contains its ID, location (E,N), parcel area and built-up area in meters as well as building permit tax(in Nepalese rupees) per square feet. Write a Java program that determines the total tax per building. [3+5]

OR

Briefly describe security restriction to Java applet. Write an applet that shows applications of Geomatics Engineering. You should also briefly describe how to run the program. [3+5]

