



**Addis Ababa Science and Technology University College of
Electrical and Mechanical Engineering
Department of Software Engineering**

Advanced Programming

Final Examination

Time Allowed: 2:10hr

Max. Wt: 50%

Full Name: _____

Id. No. _____ Section: _____

Instructor Name: _____

General Direction:

- Make sure that this examination contains 8 pages, without including the cover page. And make sure the exam have 4 parts.
- Read the instruction given for each part and attempt all questions,
- Use of red pen and pencil is not allowed,
- Switch off your mobile phones,
- Any attempt of cheating will disqualify your result,
- **Your answer should be clear and full answer (To the point), Invalid and unclear answer have no value, and you should be use all the concept of Java.**
- Neat and legible work is highly appreciated.

For the Instructor Use Only:

Part I (6 %)	Part II (5 %)	Part III (27 %)	Part IV (12 %)	Total (50%)

Extra page

Part I: Error Correction and Output of the Program

Read carefully with concentration this code and answer the following question based on the question type. And write your answer on the provided space for each questions.

N.B: Assume this code file name is Test.java

```
public class Test {

    public static int number_one=8;

    public void display_one(){
        System.out.println(number_one);
    }

    public static void display_two(){
        System.out.println(number_two);
    }

    public void display_three(){
        System.out.println(number_two);
    }

    public void display_four(){
        System.out.println(number_two);
        number_two = number_two++;
        System.out.println(number_two);
    }
    public int number_two =12;

    public static void main(String[] args) {
        Test t = new Test();
        //t.display_one();
        //t.display_two();
        t.display_three();
        t.display_four();
        t.display_three();
    }
}
```

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Part II: Filling the blank with appropriate answers

1. _____ and _____ do not take private and protected access modifier. **(2 Points)**
2. _____ are the endpoints of logical connections between two hosts and can be used to send and receive data.**(1 Points)**
3. The process of encoding the parameters in Java RMI is called _____ and the reverse or decoding process is called _____ **(2 Points)**

Part III: Short Answer

For each of the following questions, give appropriate short and precise (to the point) answers and write your answers on the space provided to each question.

1. Is must the access modifier of java main method public? Write your reason [N.B: Answers without reason have no value] **(2 Points)**
2. Give clear definition for FlowLayout, GridLayout, and BorderLayout. **(3 points)**
3. Give clear definition for InPutStream and OutPutStream **(2 Points)**

4. For an object to be a listener for an event on a source object, two things are needed: what are those things? **(2 Points)**.

5. List and mentioned the uses of **four key interfaces** that are needed to develop any database application using Java **(2 Points)**.

6. Discuss the use of those thread functions `await ()`, `signal ()`, and `signalAll ()`. **(3 Points)**

7. Write orderly the Seven Basic Steps in Using JDBC **(2 Points)**.

8. What is thread-safe in java? **(2 Points)**.

9. InetAddress class has the following three static methods. Discuss the use of each methods (3 **Points**)

```
public static InetAddress getByName(String hostName)
public static InetAddress[] getAllByName(String hostName)
public static InetAddress getLocalHost( )
```

10. Briefly defined a distributed system in software and hardware aspect.(2 **Points**)

11. Briefly discuss about RMI Registry? (2 **Points**)

12. Define the terms Stub and Skeleton (2 **Points**)

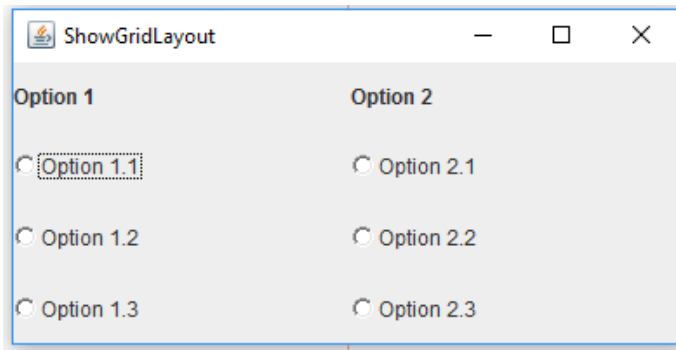
Part IV: Coding

Write appropriate java code for the following scenario the space provided for each questions.

N.B: Do not miss the idea, if you miss the idea you lost your point.

1. Write lines of code to create a server socket, after a server socket is created, the server should be active to listen all client request.(2 Points)
2. Write a java swing or AWT code to develop the following GUI. Set the Y-axis and X-axis gap between each component is 5. Use **GridLayout** layout management and in your code import only the necessary package. (5 Points).

N.B: if you import necessary file like, **import java.awt.***, **import java.Swing.*** you lose your mark (point), **don't use Panel**, and only use **GridLayout** for layout Management.



Answer for question 2

3. Assume your program code file, “input.txt” and “output.txt” file is the same folder location and the input.txt file hold “Addis ababa science and technology university” text. And write java file program to copy “input.txt” file text in to “output.txt” file. When you copy this text the output.txt file text should be title case sentence like this “Addis Ababa Science And Technology University” (**5 Points**).

N.B: Your code should be work if the input.txt text change otherwise you lose the point.

E.g., if the input text “ Abebe is a good boy” then output text will be “ Abebe Is A Good Boy”

Extra Page