

EASTERN UNIVERSITY, SRILANKA
EXTERNAL DEGREE EXAMINATION IN SCIENCE -2005/2006
SECOND YEAR FIRST SEMESTER (Mar. / May, 2010)
EXTMT 206 – INTRODUCTION TO OBJECT ORIENTED PROGRAMMING (JAVA)

Answer all questions.

Time : Two hours

1. a)

i) Show the exact output produced by the following code segment.

```
char[][] pic = new char[6][6];
for (int i = 0; i < 6; i++)
    for (int j = 0; j < 6; j++) {
        if (i == j || i == 0 || i == 5)
            pic[i][j] = '*';
        else
            pic[i][j] = '.';
    }
for (int i = 0; i < 6; i++) {
    for (int j = 0; j < 6; j++)
        System.out.print(pic[i][j]);
    System.out.println();
}
```

ii) Write a for loop that will print out all the multiples of 3 from 3 to 36, (that is: 3 6 9 12 15 18 21 24 27 30 33 36.)

iii) Write a program to generate 5 Random nos. between 1 to 100, and it should not follow the decimal point.

iv) Write a program to generate a Triangle.

eg:

1

2 2

3 3 3

4 4 4 4 and so on as per user given number */

2. a) Suppose that a class, Employee, is defined as follows:

```
class Employee {  
    String lastName;  
    String firstName;  
    double hourlyWage;  
    int yearsWithCompany;  
}
```

Suppose that the data about 100 employees is already stored in an array:

```
Employee[] employeeData = new Employee[100];
```

Write a code segment that will output the first name, last name, and hourly wage each employee who has been with the company for 20 years or more.

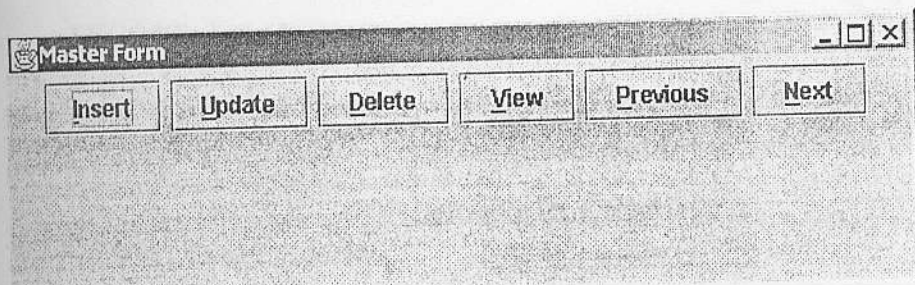
b) Consider the following two classes:

```
public class ClassA {  
    public void methodOne(int i) {  
    }  
    public void methodTwo(int i) {  
    }  
    public static void methodThree(int i) {  
    }  
    public static void methodFour(int i) {  
    }  
}  
public class ClassB extends ClassA {  
    public static void methodOne(int i) {  
    }  
    public void methodTwo(int i) {  
    }  
    public void methodThree(int i) {  
    }  
    public static void methodFour(int i) {  
    }  
}
```

- i) Which method overrides a method in the superclass?
- ii) Which method hides a method in the superclass?
- iii) What do the other methods do?

3. a) What is a Layout Manager and what are the different Layout Managers available in java.awt and what is the default Layout manager for the panel and the panel subclasses?

b) Write a java program giving the following design output.



4. a) What will be the result of compiling and running the following applet?

```
import java.awt.*;
import java.applet.*;
public class AppletTest extends Applet {
public void init()
{
super.init();
PanelTest p = new PanelTest();
p.init();
setVisible(true);
setSize(200,100);
add(p);
}
```

```
class PanelTest extends Panel{
Button b1 = new Button("Press me");
public PanelTest()
{
setSize(200,100);
setVisible(true);
}
public void init(){
super.init();
add(b1);
}
}
```

b) What are the three major concepts used in Object Oriented Programming?

Explain each of these three concepts. Give sample programs to explain the three concepts.