

# 415.111 FC 1998 - Introduction to Computing and Applications.

**Test: 6:30 - 8:00 pm**

**Surname**

(Family name)

**First Name(s)**

(Given names)

**Login Name:**

**NOTE:**

Attempt **ALL** questions.

Write your answers in the space provided.

There is space at the back for answers which overflow the allotted space

Calculators are **NOT** permitted

Questions total 100 Marks

<b>Section</b>	<b>Marks</b>	<b>Possible Marks</b>
<b>General Computing</b>		<b>15</b>
<b>Internet</b>		<b>20</b>
<b>HTML</b>		<b>7</b>
<b>ClarisWorks</b>		<b>3</b>
<b>Databases</b>		<b>10</b>
<b>Java</b>		<b>45</b>
<b>Total</b>		<b>100</b>

**General Computing [15 Marks]**

Q1. What does CPU stand for?

(1 Mark)

Q2. What does a data bus do?

(1 Mark)

Q3. Give an example of a device which is used to store secondary memory?

(1 Mark)

Q4. Which of the following are Peripheral Devices?

Device Name		YES (Peripheral)	NO (Not Peripheral)
Printer			
Co-processor			
Mouse			
Keyboard			
RAM			

(3 Marks)

Q5. Whose contribution to the history of computing occurred earlier: Charles Babbage or Blaise Pascal?

(1 Mark)

Q6. Name two examples of computing technology developed at Xerox PARC?

(2 Marks)

Q7. Is a GUI better than a CLI? Explain.

(3 Marks)

Q8. Give the name of a common Operating System?

(1 Mark)

Q9. Convert the binary number 0010 1010 into decimal. (Show all working).

(2 Marks)

15

## Internet [20 Marks]

Q10. What was ARPANET?

(1 Mark)

Q11. Why was the Internet designed as a distributed system, with no central controlling computer.

(2 Marks)

Q12. What does HTTP stand for?

(1 Mark)

Q13. Give two problems with the structure of the WWW?

(2 Marks)

Q14. Give an example of an emoticon.

(1 Mark)

**Q15. What was the Grand Renaming**

(1 Mark)

**Q16. Give two advantages of email over regular post**

(1 Mark)

**Q17. Give two rules of Netiquette**

(2 Marks)

**Q18. What is the difference between a search engine and a subject catalog**

(2 Marks)

**Q19. Explain two possible methods which are used by software to help parents who have children using the Internet?**

(2 Mark)

**Q20.** “The Internet is no different to any other published media, and should follow the same laws which apply to traditional forms of media” - Do you agree or disagree with this statement. Discuss.

(5 Marks)

20

**HTML [7 Marks]**

Q21. What are the differences between Structural and Surface markup

--

(1 Mark)

Q22. Give an example of an HTML tag which uses Surface markup

--

(1 Mark)

Q23. Draw the Table which the following HTML code would produce in Netscape:

```
<TABLE BORDER=10>  
<TR><TD>2</TD><TD>1</TD></TR>  
<TR><TD>3</TD><TD>5</TD></TR><TR><TD>6</TD><TD>4</TD></TR>  
</TABLE>
```

--

(5 Mark)

7

### ClarisWorks [3 Marks]

Q24. Why would you want to define your own Style in ClarisWorks?

(1 Mark)

Q25. Explain how the information in a painting document is stored differently from the information in a drawing document.

(2 Marks)

3

### Databases [10 Marks]

Q26. What is the smallest unit in a database?

(1 Marks)

Q27. Name one advantage and one disadvantage of a relational database compared with a flat file database.

(2 Marks)



Q28. What Normal Form is data in a relational database usually normalized to?

(1 Marks)

Q29. What Normal Form is data in a flat file database?

(1 Marks)

Q30. What are the three types of queries for a relational database?

(3 Marks)

Suppose a database has the following relation

employee(employee-id, name, office-no, division)

Q31. What is the name of the table?

(1 Marks)

Q32. What field is the primary key for the relation?

(1 Marks)

10

**JAVA [45 Marks]****FOR YOUR REFERENCE**

List of some events and the corresponding Listener methods.

<b>Event</b> (passed as a parameter in methods)	<b>Listener Interface</b> (implements ... )	<b>Listener Methods</b> (must have all these methods defined even if you do nothing in them)
ActionEvent	ActionListener	actionPerformed()
KeyEvent	KeyListener	keyPressed() keyReleased() keyTyped()
MouseEvent	MouseListener	mouseClicked() mouseEntered() mouseExited() mousePressed() mouseReleased()
MouseEvent	MouseMotionListener	mouseDragged() mouseMoved()

**FOR YOUR REFERENCE**

Q33. Complete the Java statement below so that the value in the String variable, stringNum, is converted into an int and assigned to the int variable, intNum

```
String stringNum = "55";
int intNum;
.....
```

intNum =

(2 Marks)

Q34. Write a Java statement which causes the TextField, tName, to display the string value, "My name:"

```
TextField tName;
.....
tName = new TextField(12);
```

(2 Marks)

**Q35. Write a Java statement which will create a new TextField object called tMiles which can contain up to 20 characters**

```
TextField tMiles;  
.....
```

(2 Marks)

**Q36. Complete the Java statement below so that the value in the int variable, intNum, is converted into a String and assigned to the String variable, stringNum:**

```
String stringNum;  
int intNum = 56;
```

(3 Marks)

**Q37. Write a Java statement which will add the Label object called lKilos to the applet**

```
Label lKilos;  
lKilos = new Label("Number of Kilos");
```

(2 Marks)

**Q38. Write a Java statement which will assign a random int value from 80 to 99 [80, 81, 82,...99] to the int variable called randInt**

```
int randInt;
```

(3 Marks)

Q39. Evaluate the following algebraic expression:

$$(25 / 6) - 16 \% 5$$

(3 Marks)

Q40. Evaluate the following boolean expression:

$$(3 * 2 + 1 >= 16 \% 9)$$

(3 Marks)

Q41. What string is assigned to the String variable, stringMessage, in the following piece of code:

```
String stringMessage = "Two results: ";
int intNum1 = 6, intNum2 = 5;
.....
stringMessage = stringMessage+intNum1+ " and " + intNum2;
```

(3 Marks)

Q42. What is the value of the int variable, intResult, after the following piece of code has been executed

```
int intResult = 8, intNum1 = 5;
.....
if (intNum1 >= 4)
    intResult = intResult + 12;
```

(3 Marks)

**Q43. Write a Java statement which draws a rectangle in the applet window beginning at pixel (10 across, 20 down) and having width of 40 pixels and height of 80 pixels**

```
public void paint(Graphics g){
```

(2 Marks)

```
}
```

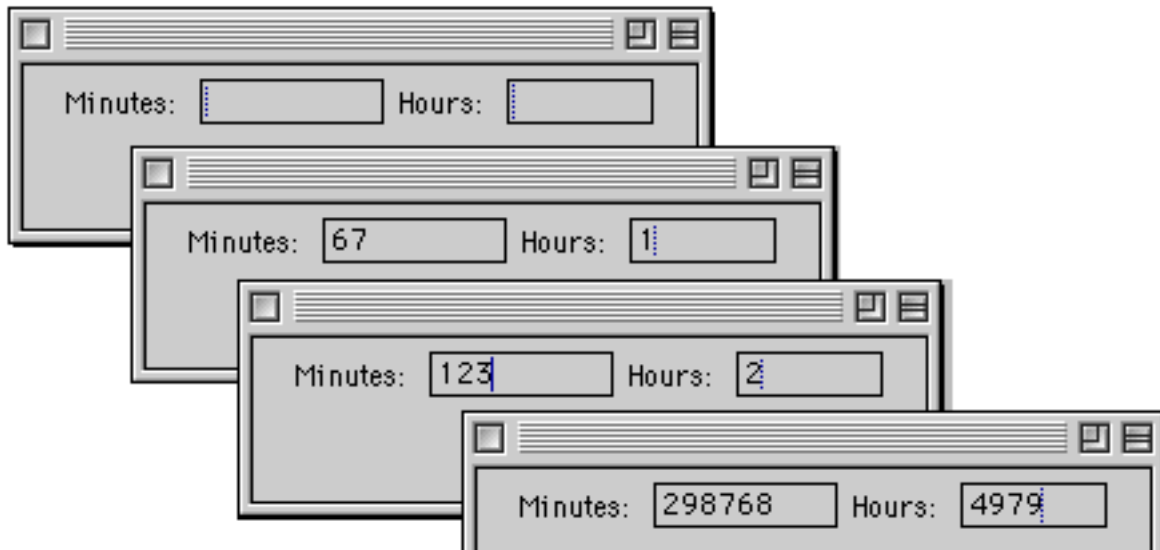
**Q44. Write a Java statement which draws a line in the applet window from pixel (30 across, 40 down) to pixel (80 across, 90 down)**

```
public void paint(Graphics g){
```

(2 Marks)

```
}
```

Q45. The following applet converts the number of minutes, entered by the user, into whole hours. [The applet ignores any minutes which are remaining.] The applet runs as follows:



Add a Button, labelled "Clear", which, when clicked, clears the 'Minutes' TextField and the 'Hours' TextField. The applet will now run as follows:



**Put your additions into the Java source code shown below:**

```

/*Converts minutes to whole hours - ignores the remaining minutes*/
import java.awt.*;
import java.applet.Applet;
import java.awt.event.*;

public class PerMaggioAppletQ1 extends Applet implements ActionListener{
    static final int HOURSTOMIN = 60;
    TextField tMinutes, tHours;
    Label lMinutes, lHours;
    int numMinutes, numHours;

```

```
public void init() {
    //Create 2 labels
    lMinutes = new Label ("Minutes:");
    lHours = new Label ("Hours:");
    //Create 2 TextFields
    tMinutes = new TextField(7);
    tHours = new TextField (5);
    //Add components to applet
    add(lMinutes);
    add(tMinutes);
    add(lHours);
    add(tHours);
    //tMinutes will inform applet if ActionEvent occurs
    tMinutes.addActionListener(this);
```

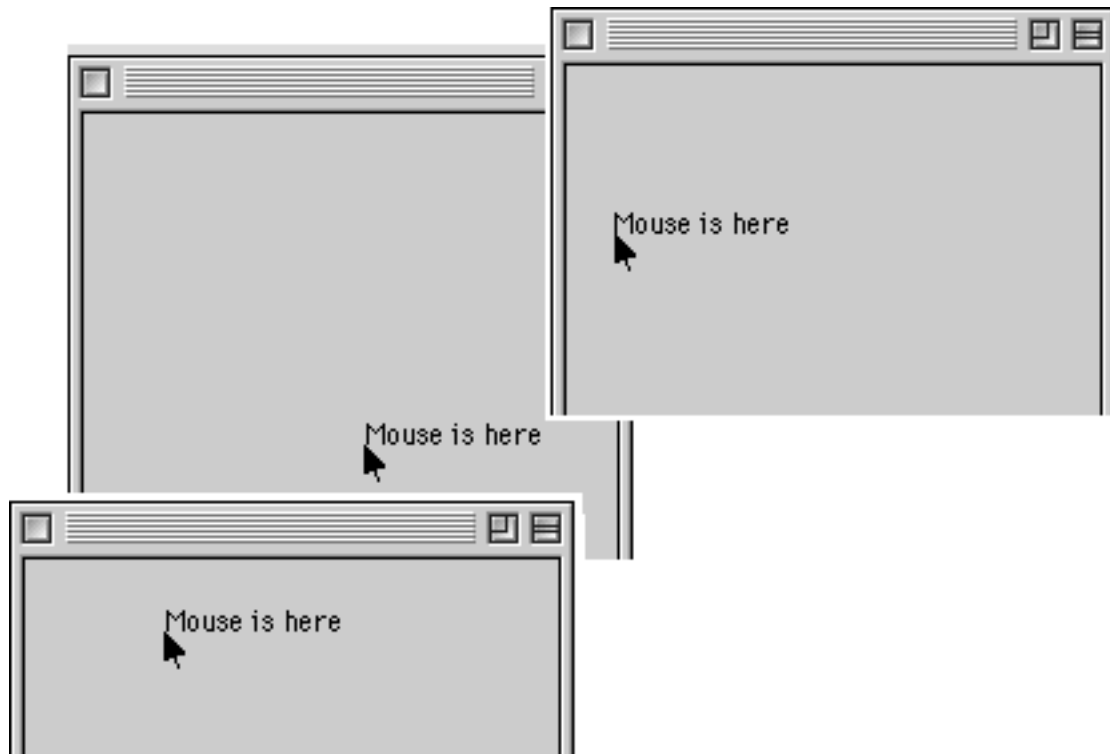
```
}//end if init() method
```

```
public void actionPerformed(ActionEvent e) {
    if (e.getSource() == tMinutes){
        numMinutes = Integer.parseInt(tMinutes.getText());
        numHours = numMinutes/HOURSTOMIN;
        tHours.setText(String.valueOf(numHours));
    }
}
```

```
}//end of actionPerformed()
}//end of applet
```

(5 Marks)

Q46. Write a Java applet which displays the String, "Mouse is here" whenever the mouse is moved. The String, "Mouse is here", is displayed in the applet area wherever the mouse position is. Your finished applet should run as follows:

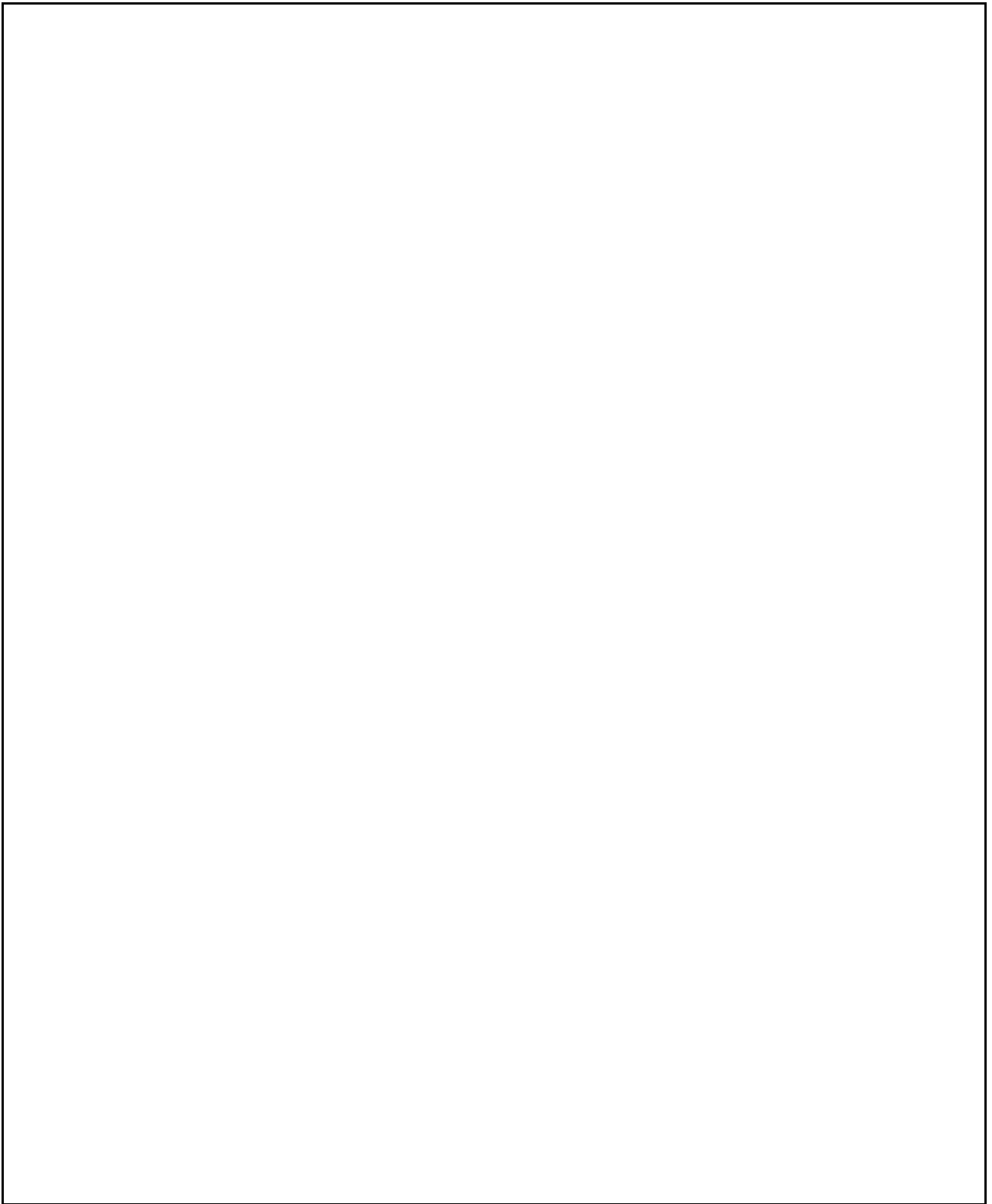


```
/*Displays "Mouse is here" wherever the mouse is while mouse is  
being moved*/
```

```
import java.awt.*;  
import java.applet.Applet;  
import java.awt.event.*;
```

```
//CONTINUE YOUR SOURCE CODE HERE
```





(10 Marks)

45

**Overflow Sheet 1**

Write the question number next to your answer.

You must **ALSO** indicate in the allotted space that you have used the overflow sheet.

ID Number: \_\_\_\_\_

415.111FC

**Rough Working**

This sheet will NOT be marked

ID Number: \_\_\_\_\_

415.111FC

**Rough Working**

This sheet will **NOT** be marked