MACHAKOS UNIVERSITY

University Examinations for 2022/2023

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

THIRD YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY)

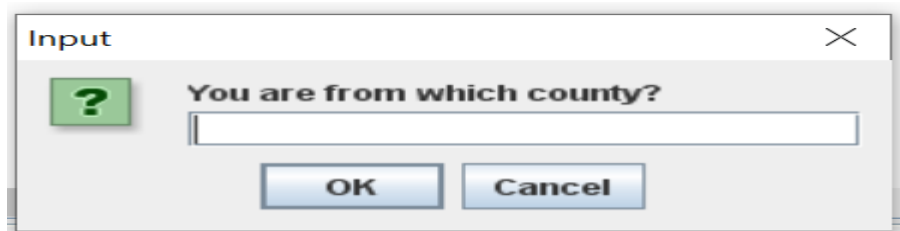**SIT 327: EVENT DRIVEN PROGRAMMING.**

DATE:28/7/2023   **TIME:8.30-10.30 A.M**

INSTRUCTIONS

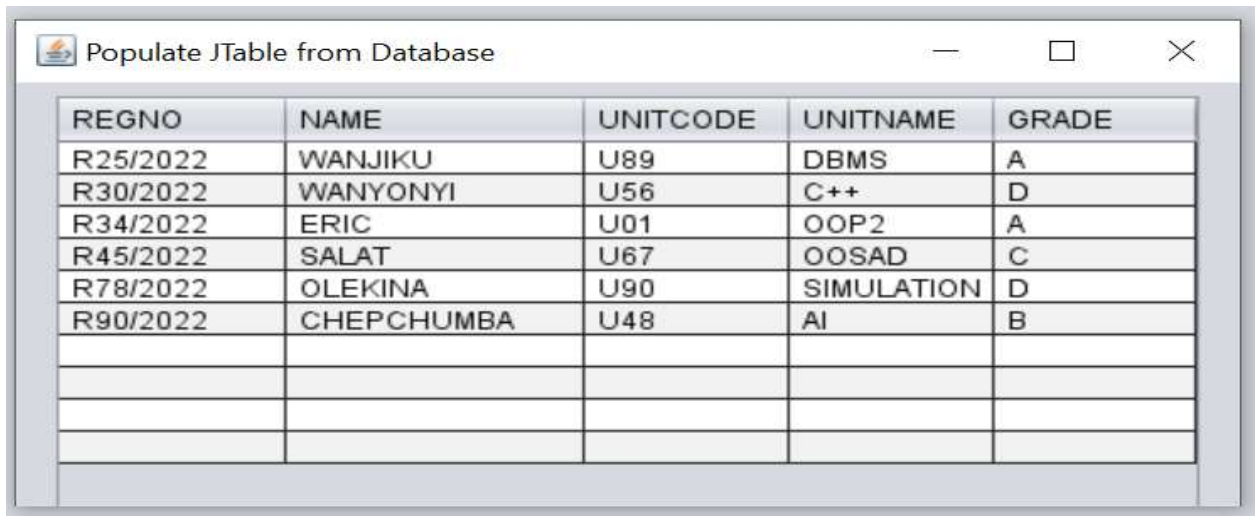**Answer Question ONE and other TWO Questions**

QUESTION ONE (COMPULSORY) (30 MARKS)

a) Define the following terms.   (4 marks)

     i) Object

     ii) Event

     iii) Event Listener

     iv) Event Handler

b) Write a JAVA code to explain a JAVA multi catch block in exception handling.   (4 marks)
c) Show with the help of a java code how to add a frame into your program.   (4 marks)
d) Explain the role played by the MenuBar, menu and menuItem classes.   (3 marks)

e) Write a source code to implement a GUI that looks like the one shown below.   (5 marks)

f) Explain the following Java API packages.   (4 marks)

     i.   Java.awt.event

     ii.   Java.sql

     iii.   Java.utic.concurrent

     iv.   Javax.swing

g) Write a Java source Code that will display the data below from a database called DEGREE in a table named RESULTS. (6 marks)

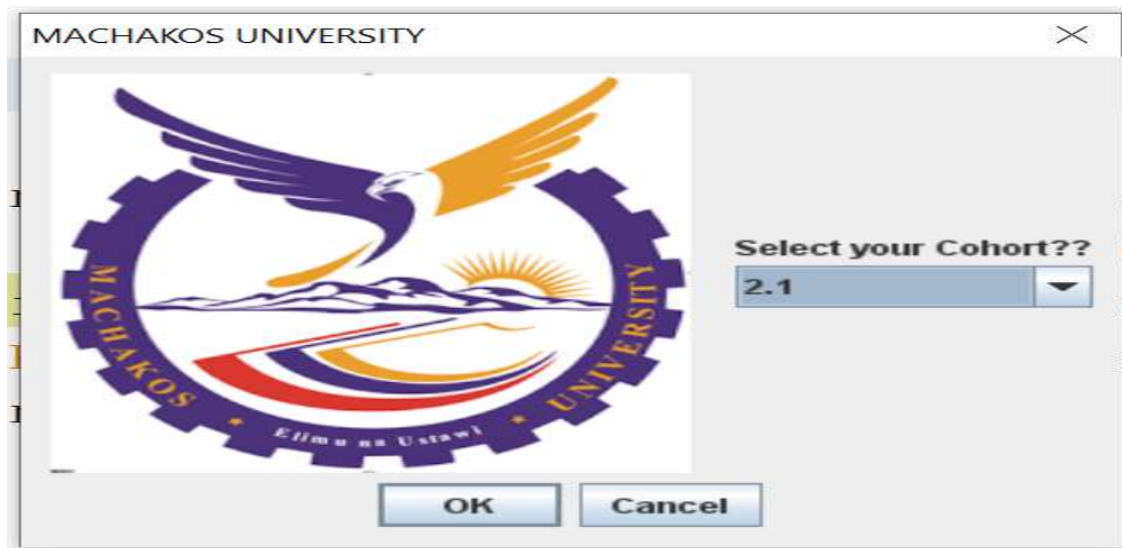| REGNO	NAME	UNITCODE	UNITNAME	GRADE
R25/2022	WANJIKU	U89	DBMS	A
R30/2022	WANYONYI	U56	C++	D
R34/2022	ERIC	U01	OOP2	A
R45/2022	SALAT	U67	OOSAD	C
R78/2022	OLEKINA	U90	SIMULATION	D
R90/2022	CHEPCHUMBA	U48	AI	B

QUESTION TWO (20 MARKS)

a) Define the following terms. (4 marks)

   i. Driver class

   ii. Unit testing

   iii. Adapter classes

   iv. Two-tier JDBC architecture

b) Why are swing components considered as lightweight? (2 marks)

c) Write in details the code for creating the following.

   i. Exit button. (3 marks)

   ii. Clear button. (3 marks)

   iii. Result button (which handle the event of calculating net pay after deducting 5% from gross pay). (4 marks)

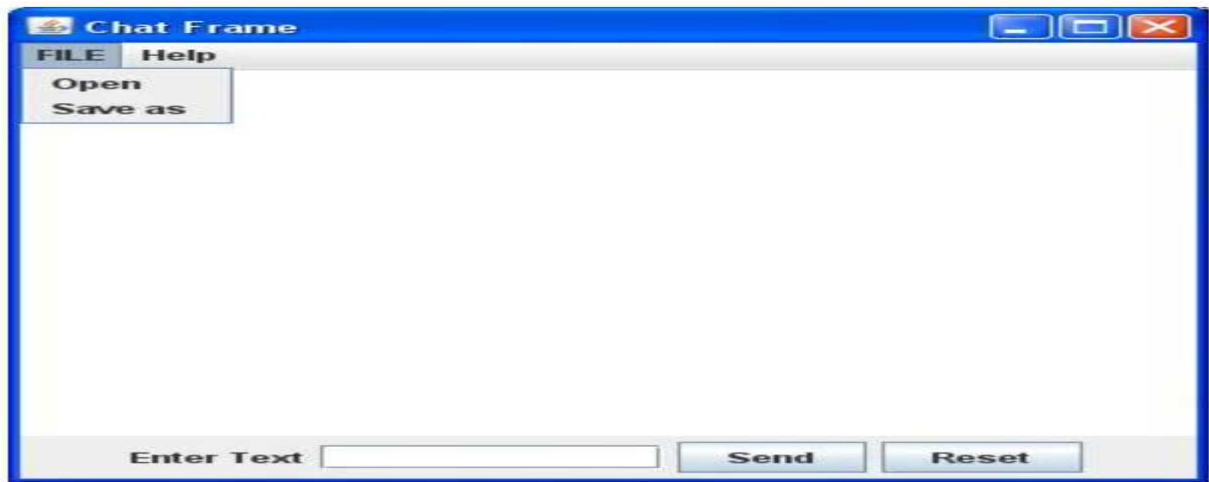d) Explain the layout manager that have been used to create the following GUIs? (4 marks)

My Second GUI

Click me   Click me too

QUESTION THREE (20 MARKS)

a)   Outline five MessageTypes for JOptionPane.   (5 marks)

b)   State four advantages of using SQLite over MySQL for database connection with Java.

                                                                                    (4 marks)

c)   Define JDBC Driver as used in Java Programming and explain the four types of JDBC
      Drivers.   (5 marks)

d)   Write a Java program to implement the GUI below.   (6 marks)

QUESTION FOUR (20 MARKS)

a) Explain the actions performed by the methods below.   (4 marks)
        i)   getText()
        ii) setVisible()

b) Write a Java Source Code to output the swing form below.   (6 marks)

c) Explain the function of each of the following swing components using code snippet for each. (6 marks)

    i)   JRadioButton

    ii) JcomboBox

    iii) Jlist

d) Explain what these two statements do: (4 marks)

    i.   Machakos frame = new Machakos();

    ii.   String m = JOptionPane.showInputDialog(frame, "Which course are you taking?");

QUESTION FIVE (20 MARKS)

a) Identify the container that does not contain title bar and MenuBars but can have other components like button, textfield etc. (1 mark)

b) Consider the Java class **Exam** below and answer the questions that follow.

```
importjavax.swing.*;
importjava.awt.*;
importjava.awt.event.*;
public class Exam extends JFrame implements ActionListener
{
privateJTextField txt = new JTextField();

public Exam()
{
        setSize(400,400);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setLayout( new GridLayout(2,2) );
        add(txt);
```

```
        JLabel lab = new JLabel(" ");
        add(lab);
        JButton pea = new JButton("PEAS");
        add(pea);
        JButton nut = new JButton("NUTS");
        add(nut);
        pea.addActionListener(this);
        nut.addActionListener(this);
    }
    public void actionPerformed( ActionEvent e)
    {
        String veg = e.getActionCommand();
        if (veg.equals("PEAS")) txt.setText("R4.00");
        if (veg.equals("NUTS")) txt.setText("R9.00");
    }
    public static void main(String[] args)
    {
        Exam w = new Exam();
        w.setVisible(true);
    }
}
```

   i)   Explain why the **Exam** class extends JFrame and why it implements
        ActionListener. (4 marks)

   ii) Draw the window that would appear on the screen when this program runs.

        (5 marks)

c) Explain the method do you use to perform the following:

   i)   add a menu bar to a top-level container such as a JFrame? (2 marks)

   ii) specify the default button for a top-level container such as a JFrame or JDialog?

        (2 marks)

   iii) enable and disable components such as JButtons? (2 marks)

d) Outline four advantages of using MySQL for database connection with Java. (4 marks)