(Knowledge for Development)

KIBABII UNIVERSITY (KIBU)

UNIVERSITY EXAMINATIONS
2020/2021 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS
SECOND YEAR SECOND SEMESTER

FOR THE DEGREE IN
(INFORMATION TECHNOLOGY)

COURSE CODE: BIT 221
COURSE TITLE: EVENT DRIVEN PROGRAMMING

DATE: 07/10/2021   **TIME:** 9.00 A.M-11.00 A.M

INSTRUCTIONS
ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (COMPULSORY) [30 MARKS]

a. i. Differentiate between an error and an Exception. [2 marks]

ii. Programmers have the best way of preventing and terminating a program using an appropriate exception handler that is associated with it. Explain how Try and catch blocks works. [4 marks]

b. Explain briefly the meaning of the following terms

       i. Event [2 marks]

      ii. Listener [2 marks]

     iii. Exception object [2 marks]

     iv. Event handler [2 marks]

      v. Event Driven Programming [2 marks]

c.

    i. Write a java code that will Display the message I Love Java by using JOptionPane.

[2 marks]

    ii. Using JOptionPane input dialog, write a java statement to input the person's first name. [2 marks]

    iii. Using JOptionPane input dialog, write a java statement to input the person's age (integer). [2 marks]

    iv. Which object generates events? Which object processes events? [2 marks]

    v. A class that implements the ActionListener interface must implement which method. [1 mark]

    vi. Write the signature for the method stated in (v.) above [3 marks]

    vii. What does the getActionCommand method of the Action Event class return? [2 marks]

QUESTION TWO [20 MARKS]

a. What is the purpose of a layout manager? Explain in detail **THREE** different types of layouts used in creating and organizing a GUI objects on a window. [7 marks]

b. Write an SQL statement that will:

    i. Create a table called "exam" with the following fields: regNo, courseCode, cat, exam, academicYear and yearOfStudy(use appropriate data type and sizes)

[3 marks]

ii. Insert three students records with appropriate details(use your own data)

[3 marks]

iii. Retrieve the exam information for all students who scored above 20 marks

[3 marks]

c. Explain the meaning of the following arguments of the setDefaultCloseOpreation() method:

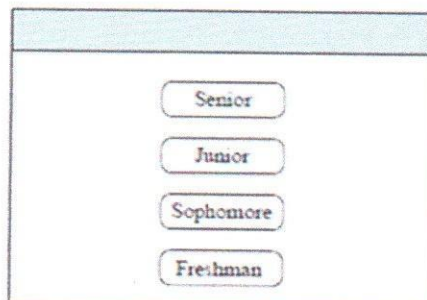|		
i.	JFrame.DO_NOTHING_ON_CLOSE	**[1 mark]**
ii.	JFrame.HIDE_ON_CLOSE	**[1 mark]**
iii.	JFrame.DISPOSE_ON_CLOSE	**[1 mark]**
iv.	JFrame.EXIT_ON_CLOSE	**[1 mark]**

QUESTION THREE   [20 MARKS]

a. Define a Jframe subclass that has four vertically positioned buttons. The labels for the four buttons are Senior, Junior, Sophomore, and Freshman. This is one possible layout:

When a button is clicked, display a message that identifies which button is clicked, using JOptionPane. **[12 marks]**

b. Write a Java statement to create a menu with the title ("Programmes"). **[2 marks]**

c. Write Java statements to add menu items named "Bachelors of Information Technology", "Bachelors of Computer Science", "Bachelors of Information Science" and "Masters in Information Technology" to the menu created in (b) above. **[3 marks]**

d. Write Java statement to add the menu created in (c) above to the menu bar of a JFrame window object named jf. **[3 marks]**

QUESTION FOUR   [20 MARKS]

a. Create a java GUI that allows the user to enter the desired user name and password. Provide a button that when clicked, a popup window appears informing the user that their account was successfully created. Include labels as appropriate.   [12 marks]

b. Differentiate between the following two packages and discuss any two unique classes within each that make them relevant in creating Graphical User Interface (GUI).

   i. Swing   [4 marks]

   ii. AWT   [4 marks]

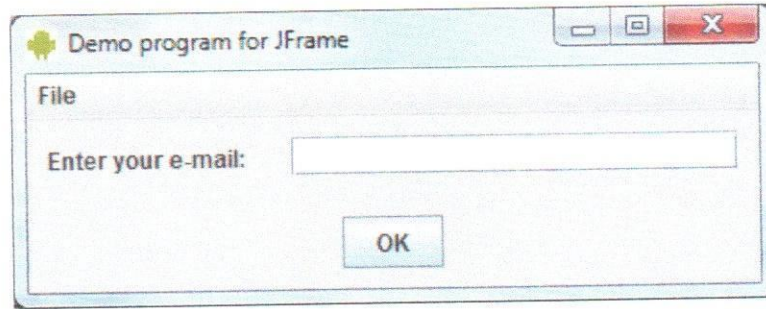## QUESTION FIVE   [20 MARKS]

a. Normally we create a frame window by creating a class that extends

```
javax.swing.JFrame class:
      Public class SwingJFrameDemo extends JFrame {
         public SwingJFrameDemo() {
             super("Demo program for JFrame");
         }
      }
```

You are required to add components on the above class by writing a java code that will:

   i.   create a Jframe object and name it "MY JAVA FRAME"   [2 marks]

   ii.   set layout of the frame above to Grid Layout   [2 marks]

   iii. add a text field component to the frame's content pane and set its character length to 50.   [2 marks]

b. You are in the process of developing an online application System that captures the following students' details: studentName, national_ID, DoB, County, Phone_No and email_Address.

   i.   Using appropriate GUI objects, write a java program that will implement the window toward capturing the above details from astudent and add necessary Button object for event management.   [8 marks]

   ii.   Add a Swing java statement that implement the displays on the screen shot below.   [3 marks]

Demo program for JFrame

File

Enter your e-mail: [   ]

OK

ii. On clicking the "*OK*" button, a confirm message dialog appears as below, when Yes is clicked on it closes the window   **[3 marks]**

Exit

? Are you sure you want to quit?

Yes   No