

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**FIRST YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF  
SCIENCE IN APPLIED COMPUTER SCIENCE**

**ACSC 231: USER INTERFACE PROGRAMMING**

**STREAMS: BSC APPL COM SCI**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 12/04/2023**

**11.30 A.M – 1.30 P.M**

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**INSTRUCTIONS:**

*Instructions: Answer Question 1 and Any Other Two.*

- Answer QUESTION ONE and any other TWO questions.
- This is a CLOSED BOOK exam. No reference materials are allowed in the exam room.
- No mobile phone allowed in the exam room (*make sure to switch it off and leave it with the invigilator if you carried one*).
- Write your answers legibly and use your time wisely

**SECTION A (COMPULSORY)**

**Question One (Compulsory) [30 marks]**

- a) Describe the objects involved in event handling. **[6 Marks]**
- b) Describe the constructors for a Frame's Flow Layout() **[6 Marks]**
- c) Labels should be created with anonymous instances. Explain. **[4 Marks]**
- d) Why are nested classes necessary? **[4 Marks]**
- e) Outline the steps followed in event handling. **[4 Marks]**
- f) Using code, show how you can implement the windows adapter classes. **[6 Marks]**

**SECTION B (Answer any TWO questions from this section)**

**Question Two [20 marks]**

- a) Discuss the top-level containers in a swing application. **[6 Marks]**

- b) Write a program that adds an ActionListener to a Button. When the button is clicked, the text “**You Clicked me Hard**” is displayed on a text box. **[10 Marks]**
- c) Give TWO differences between Swing and AWT (abstract window toolkit) **[4 Marks]**

**Question Three [20 marks]**

- a) Write a program that allows the user to select one of any FIVE Kenyan cities from a choice box. The selected city is then displayed on a label beneath the choice box in bold. **[12 Marks]**
- b) Using code, illustrate the of a nested class. **[8 Marks]**

**Question Four [20 marks]**

- a) Differentiate between the *setVisible (argument)* and the *pack ()*Frame methods as used in GUI programming. **[6 Marks]**
- b) Write a listener class for a button that implements the *ActionListener* that changes a frame’s background color between Blue and Black. (Nb: Write the listener class only not whole program). **[5 Marks]**
- c) Using diagrams, discuss any three common layout managers in the package *java.awt*. **[9 Marks]**

**Question Five [20 marks]**

- a) Using swing, AWT, and event model (listeners). Write a GUI code that has the following features: - **[12 Marks]**
- A JPanel as the main container, and contains a label and a button.
  - A button (*myButton*) called “*push me*”, which when pushed displays the number of times it has been pressed on the label.
  - The label displays “*count*” and the number of times a button is pressed.
- b) Describe FOUR layout managers mostly used in GUI development **[8 Marks]**
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