PROGRAMMING IN JAVA

Assignment X

TYPE OF QUESTION: MCQ

Number of questions: 10 Total marks**: 10 × 1 = 10**

QUESTION 1:

Which Swing component is best suited for displaying a drop-down list of selectable options?

a. **JButton**

b. **JComboBox**

c. **JTextField**

d. **JPanel**

Correct Answer:

b. **JComboBox**

Detailed Solution:

`JComboBox` is a Swing component that provides a drop-down list from which users can select one option.

QUESTION 2:

What will be the output of the following Java code?

```
import javax.swing.*;
import java.awt.*;

public class SwingExample {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Example");
        frame.setLayout(new FlowLayout());
        frame.add(new JButton("Button 1"));
        frame.add(new JButton("Button 2"));
        frame.setSize(300, 200);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }
}
```

a. **A frame with two buttons labeled “Button 1” and “Button 2”.**

b. **A frame with only one button labeled “Button 2”.**

c. **Compilation Error.**

d. **Runtime Error.**

Correct Answer:

a. **A frame with two buttons labeled “Button 1” and “Button 2”.**

Detailed Solution:

The `FlowLayout` layout manager arranges components in a row. Here, both buttons are added and displayed in the frame.

QUESTION 3:

Which of the following is true about the `JLabel` component in Java Swing?

a. **It is used only for displaying text.**

b. **It can display text and icons.**

c. **It cannot be added to a `JPanel`.**

d. **It generates mouse events by default.**

Correct Answer:

b. **It can display text and icons.**

Detailed Solution:

`JLabel` can display both text and images/icons. It is commonly used for non-interactive purposes in Swing GUIs.

QUESTION 4:

Which method is used to handle mouse click events in Java Swing?

a. **mouseClicked()**

b. **keyPressed()**

c. **actionPerformed()**

d. **componentShown()**

Correct Answer:

a. **mouseClicked()**

Detailed Solution:

The `mouseClicked()` method in the `MouseListener` interface is used to handle mouse click events in Java Swing.

QUESTION 5:

What should replace `// INSERT CODE HERE` to create a `JFrame` with a `JButton` labeled `"Click Me"`?

```
import javax.swing.*;

public class FrameExample {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Demo Frame");
        JButton button = new JButton("Click Me");
        // INSERT CODE HERE
        frame.setSize(300, 200);
        frame.setVisible(true);
    }
}
```

a. **frame.add(button);**

b. **frame.insert(button);**

c. **frame.append(button);**

d. **frame.push(button);**

Correct Answer:

a. **frame.add(button);**

Detailed Solution:

The `add()` method is used to add components like buttons, text fields, or panels to a `JFrame`.

QUESTION 6:

Identify and correct the error in the following program:

```
import javax.swing.*;
import java.awt.*;

public class PanelExample {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Panel Example");
        JPanel panel = new JPanel();
        JButton button = new JButton("Submit");
        panel.setFlowLayout(); // ERROR
        panel.add(button);
        frame.add(panel);
        frame.setSize(300, 200);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }
}
```

What should the erroneous line (`panel.setFlowLayout();`) be replaced with?

a. **panel.setLayout(new GridLayout());**

b. **panel.addFlowLayout();**

c. **panel.appendLayout(new FlowLayout());**

d. **panel.setLayout(new FlowLayout());**

Correct Answer:

d. **panel.setLayout(new FlowLayout());**

Detailed Solution:

The `setLayout()` method is used to define the layout manager for a panel. `FlowLayout` is the default layout for `JPanel`.

QUESTION 7:

What will the following Java program output?

```
import javax.swing.*;

public class LabelExample {
    public static void main(String[] args) {
        JFrame frame = new JFrame("Label Demo");
        JLabel label = new JLabel("Welcome to Swing");
        frame.setSize(250, 100);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }
}
```

a. **A frame with the label "Welcome to Swing".**

b. **A frame with no visible label.**

c. **Compilation Error.**

d. **Runtime Error.**

Correct Answer:

b. **A frame with no visible label.**

Detailed Solution:

The `JLabel` has to be added to the frame using `add()`. The frame is visible, but the label is not displayed as it has not been added.

QUESTION 8:

What does the following code do?

```
import javax.swing.*;

public class NPTEL extends JFrame {
    JButton button;

    public NPTEL() {
        button = new JButton("Programming in Java");
        add(button);
        setSize(300, 200);
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        setVisible(true);
    }

    public static void main(String[] args) {
        new NPTEL();
    }
}
```

a. **Creates a JFrame with a JButton labeled "Programming in Java"**

b. **Compiles with errors**

c. **Displays a message dialog**

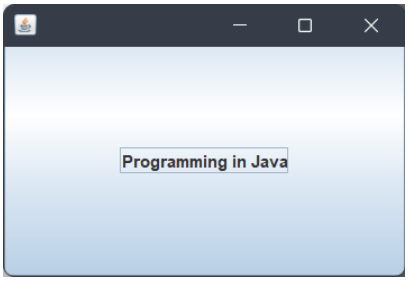
d. **Creates a JPanel with a JButton labeled "Programming in Java"**

Correct Answer:

a. **Creates a JFrame with a JButton labeled "Programming in Java"**

Detailed Solution:

The code extends `JFrame` and uses the `JButton` class object to create a button with the name of "Programming in Java".



QUESTION 9:

What happens when the button in this Java code snippet is clicked?

```
import javax.swing.*;
import java.awt.event.*;
public class NPTEL {
    public static void main(String[] args) {
        JFrame frame = new JFrame("NPTEL Java Course");
        JButton button = new JButton("Click Me");
        button.setBounds(50, 100, 100, 40);
        button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
            JOptionPane.showMessageDialog(null, "Welcome to the course");
            }
        });
        frame.add(button);
        frame.setSize(300, 200);
        frame.setLayout(null);
        frame.setVisible(true);
    }
}
```

a. **The program exits**

b. **A message dialog with the text "Welcome to the course" is displayed**

c. **The button label changes to "Welcome to the course"**

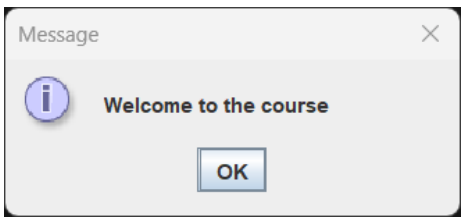
d. **Nothing happens**

Correct Answer:

b. **A message dialog with the text "Welcome to the course" is displayed**

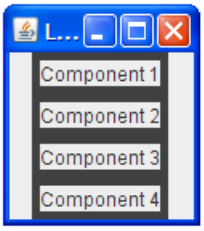
Detailed Solution:

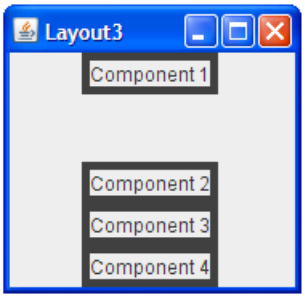
The code creates a button with label “Click Me” and in the frame titled “NPTEL Java Course”. A action listener is defined that opens a new message dialog with the text “Welcome to the course” when the button is clicked.



QUESTION 10:

The container displays a number of components in a column, with extra space going between the first two components.





Which of the following layout manager(s) most naturally suited for the described layout?

a. **BoxLayout**

b. **FlowLayout**

c. **BorderLayout**

d. **GridLayout**

Correct Answer:

a. **BoxLayout**

Detailed Solution:

BoxLayout lays out components in either a column or a row. You can specify extra space using an invisible component.