

## Mid-Term Exam Structure

The exam is made up of two sections:

- I. **Multiple Choice** questions (30 questions, 1 mark each)
- II. **Hands-On exercise:** Write a SWING application (Evaluation: OOD - 25 marks, GUI - 35 marks, User friendliness - 10 marks)

The exam will cover:

1. **Exploring Graphical User Interface Components (chapter 12)**
2. **Drawing Graphics, Shapes, and Images (chapter 13)**
3. **Handling Exceptions and Text I/O (chapter 14)**
4. **Introducing Abstract Classes and Interfaces (chapter 15)**
5. **Working with Event-Driven Programming and GUI Components (chapter 16,17)**

## Sample MC Questions

In which of the following JPanel methods do you place the drawing code?

- a) repaint()
- b) paintComponent()
- c) setLayout()
- d) validate()
- e) None of the above

What exception type does the following program throw?

```
public class Test {  
    public static void main(String[] args) {  
        Object o = null;  
        System.out.println(o.toString());  
    }  
}
```

- a) ArrayIndexOutOfBoundsException
- b) ClassCastException
- c) NullPointerException
- d) ArithmeticException
- e) StringIndexOutOfBoundsException

The fact that class Graphics is abstract contributes to Java's portability because:

- a) drawing is performed differently on every platform that supports Java. A subclass of Graphics must be created that uses the drawing capabilities of the current platform.
- b) objects of non-abstract classes can only be instantiated on the Windows platform.
- c) drawing should not be performed on non-Linux platforms.
- d) Class Graphics is not abstract.