# Final 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 - 20 marks, GUI - 20 marks, Java APIs – 20 marks, User friendliness - 10 marks)

The exam will cover the following topics:
1. **Handling Exceptions and Text I/O**
2. **Introducing Abstract Classes and Interfaces**
3. **Working with Event-Driven Programming and GUI Components**
4. **Examining Applets, Multimedia, and Binary I/O**
5. **Utilizing Generics, Java Collections Framework**
6. **Analyzing Data Structures and Algorithms**
7. **Multithreading**
8. **Building Network-Based Applications**
9. **Implementing Database Applications with JDBC**

## Sample Questions

**1. Multiple Choice:**
To catch an exception, the code that might throw the exception must be enclosed in a
  a.  throws block
  b.  catch block
  c.  try block
  d.  finally block

Which statement is false?
  a.  A linked list is a linear collection of self-referential class objects called nodes connected by reference links.
  b.  A linked list is appropriate when the number of data elements to be represented in the data structure is unpredictable.
  c.  The java.util package contains class LinkedList.
  d.  By convention, the link reference in the last node of a list is set to null to mark the end of the list.

Once the `ServerSocket` is created, the server can listen indefinitely (or block) for an attempt by a client to connect. This is accomplished with a call to the `ServerSocket` method:
  a)  connect
  b)  block
  c)  accept
  d)  listen

When an applet container loads an applet, the container calls three of the applet's methods. In sequence, these three methods are:

a. start, init, stop
b. start, init, paint
c. init, start, stop
d. init, start, paint

An uncaught exception:
a) is a possible exception that never actually occurs during the execution of the program.
b) is an exception that occurs for which the matching catch clause is empty.
c) is an exception that occurs for which there are no matching catch clauses.
d) is another term for a thrown exception.

Initially, a ResultSet cursor is positioned:
a) before the first row
b) at the first row
c) at the last row
d) after the last row

## Java Code:

I. Let Customer be a class which describes customer objects, and *custId, firstName, lastName, email* are its instance variables. Write a Java GUI application that allows the user to manage customer information (add, display, save).

II. Write a Java GUI Application that stores course information (course code, course name, day/time, etc) in a file.