



# TECHNICAL UNIVERSITY OF MOMBASA

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## INSTITUTE OF COMPUTING AND INFORMATICS

### DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

#### UNIVERSITY EXAMINATION FOR:

#### BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

#### ICS 2201 : OBJECT ORIENTED PROGRAMMING II

#### END OF SEMESTER EXAMINATION

**SERIES:** APRIL 2016

**TIME:** 2 HOURS

**DATE:** Pick Date Select Month Pick Year

#### Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

**Do not write on the question paper.**

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#### Question ONE

(a) Explain the following concepts of object oriented programming

- i. Applet (2marks)
- ii. Event (2marks)
- iii. Object (2marks)
- iv. Class (2marks)
- v. Message passing (2marks)

(b) Explain the role of the following JDK tools. Use an appropriate example to demonstrate how they are used in command line environment.

- i. Java Compiler (3marks)
- ii. Java interpreter (3marks)
- iii. Java Debugger (3marks)

(c) Distinguish between the following:

- i. Destroy() method and finalize() method. (4marks)
- ii. Checkbox class and checkboxGroup (4marks)

(d) Briefly explain any three events in Java. (3marks)

### Question TWO

(a) Explain ALL the components of main ( ) method as given below (3marks)

(b) Write program code segment that carry out the following:

- i. Play audio clip named mySong.au. (3marks)
- ii. Retrieve and display image named myPicture.jpg . (3marks)
- iii. Create a command button labeled SUBMIT. (3marks)

(c) Write output generated by the code given below: (4marks)

```
import java.awt.*;
public class MyItems extends java.applet.Applet {
    public void init() {
        List lst = new List(5, true);
        lst.addItem("Hamlet");
        lst.addItem("Claudius");
        lst.addItem("Gertrude");
        lst.addItem("Polonius");
        lst.addItem("Horatio");
        lst.addItem("Laertes");
        lst.addItem("Ophelia");

        add(lst);
    }
}
```

Differentiate between a checkBox class from a checkGroupbox class. (4marks)

**Question THREE**

- (a) What is a constructor? With the help of an appropriate example, demonstrate how constructor is implemented in Java (4marks)
- (b) (i) Write an applet code that that display the message on the web page :  
“ Wonderful to use Applets in web pages”. (5marks)
- (ii) Write the code to attach the applet code on the web page. (3marks)
- (iii) Write the command line statement to display the webpage in (ii) above. (2marks)
- (c) State the purpose of AWT as used in Java and briefly discuss what AWT consists of.( 6 marks)

**Question FOUR**

- (a) State any four characteristics of a good user interface. (4marks)
- (b) Given below is user form for login user in a web site, Write the code that implements the interface as given below.

The image shows a login form with a grey background. It contains three input fields stacked vertically. The first field is labeled 'Enter your name:' and contains the text 'your name here'. The second field is labeled 'Enter your phone number:' and contains the text '434 235 2354'. The third field is labeled 'Enter your password:' and contains a series of asterisks '\*\*\*\*\*'.

(10marks)

- (c) Using example, explain the function of the following layout managers on user interface components.
  - i. Flow layout
  - ii. Grid layout (6marks)

**Question FIVE**

- (a) Differentiate:
  - (i). Call by value and call by reference (4 Marks)
  - (ii). Static variable and instance variable (4 Marks)
- (b) Write a program that accepts marks for four subjects, computes the average and awards an order of merit based on the average mark using the following classification.

Average mark	Order of Merit
75-100	Distinction

65-75	Credit
50-65	Pass
0-50	Fail

(12 Marks)