



# **JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS**

**DIPLOMA IN  
LINUX FOR ENGINEERING AND IT PROFESSIONALS**

**Year II Semester I Examination**

**ICT 2212 - INTRODUCTION TO JAVA PROGRAMMING**

**December 2013**

## **INSTRUCTIONS**

1. Answer Question 1 and any other two questions
2. Each Question has a total of 20 marks
3. All answers **MUST** be on the answer booklet provided

### Question 1 (20 Marks)

- a) List any four key advantages of Java over many conventional programming languages (4 Marks)
- b) Explain the following terms in Java programming (10 Marks)
  - i. Class
  - ii. Inheritance
  - iii. Encapsulation
  - iv. Exception
  - v. Applet
- c) Hence or otherwise, state two main advantages of implementing java encapsulation in code (2 Marks)
- d) With the aid of flow charts, show the difference in process flow of generating a java class and an executable code in a procedural programming language (4 Marks)

### Question 2 (20 Marks)

- a) Using either the while... or the switch... statements in Java flow control, develop a java class to accept 2 CAT marks out of 20 each, a project score out of 10 and final exam out of 50 for a class of 40 students. (16 Marks)
- b) State any two points at which you would implement an error trap. (4 Marks)

### Question 3 (20 Marks)

- a) Distinguish between Object Oriented Programming and Functional/Procedural programming (2 Marks)
- b) State two advantages of the following java components in a program (4 Marks)
  - i. Interfaces
  - ii. Exceptions
- c) State any two points at which you would implement an error trap. (4 Marks)

### Question 4 (20 Marks)

- a) Interpret the following Java Statement: `01 if( x < 10) x = 10;` (2 Marks)
- b) Write two alternative ways of writing the same statement without syntax error or distortion of meaning (4 Marks)
- c) What is a Java Object? (2 Marks)
- d) State two basic characteristics that real world objects share, giving an example (2 Marks)
- e) State any three design relationships between objects and their classes in Object-oriented programming context. (3 Marks)
- f) Differentiate between the two statements type at the C prompt in a Java development Environment
  - a. `Javac payroll.java` and `java payroll` (4 Marks)
- g) Interpret the purpose of the following code: (3 Marks)

### Question 5 (20 Marks)

- a) Define a bytecode. (1 Mark)
- b) Explain the implications of the java class introductory words (8 Marks)
- i. **public**      ii) **static**      iii) **void**      iv) **main()**
- c) Distinguish between the following Java Operators (4 Marks)
- i. **&&** and **AND**
- ii. **++** and **!**
- d) Write assignment statements that would initialize the values of: Overweight as True, nationality as Kenyan, and MonthlyEarning as 39000. (3 Marks)
- e) Explain any four key features of a fully implemented Java Platform (4 Marks)