**1-6**

##  JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2015/2016

**THIRD YEAR FIRST SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

**BIT 2203 : ADVANCED PROGRAMMING**

**DATE: FEBRUARY 2016 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER**

 **TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) In regard to Java programming, elaborate on the concept of exception. [5 marks]

(b) Briefly highlight on the concept of reading from a file and writing to a file. [5 marks]

(c) In Java it is possible to define two categories of exceptions and errors. Elaborate.

 [5 marks]

(d) Differentiate between sequential and random access. [5 marks]

(e) Briefly elaborate the concept of sockets in regard to programming. [5 marks]

(f) Write a simple program to show how thread is created. [5 marks]

**QUESTION TWO (20 MARKS)**

(a) Explain the two main streams of files that are contained in Java. [10 marks]

(b) Remote Method Invocation is a concept that is applied in Java. Define the RMI and explain its various applications. [10 marks]

**QUESTION THREE (20 MARKS)**

(a) In C++ standard library, there are three well-structured components. Briefly explain on them. [10 marks]

(b) Discuss the concept of operator overloading. Write a simple program illustrating this.

 [10 marks]

**QUESTION FOUR (20 MARKS)**

(a) Highlight on the concept of exception handling in Java. [10 marks]

(b) Differentiate between a class template and a function template. Write the syntax in each. [10 marks]