

**W1-2-60-1-6**

## JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2013/2014

**SECOND YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY**

**ICS 2209 :** **DESIGN AND IMPLEMENTATIONS OF COMPUTER APPLICATIONS**

**DATE: APRIL 2014 TIME: 2 HOURS**

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

**ANY OTHER TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Define the following: [4 marks]

1. Extreme programming.
2. Rapid application development.
3. An algorithm.
4. Referential integrity.

(b) Discuss the characteristics of an algorithm. [4 marks]

(c) Describe the application of computer system in road traffic contract.

[4 marks]

(d) Discuss the common activities to all software processes. [4 marks]

(e) Describe the major components of a software design. [4 marks]

(f) Discuss the various architectural models that can be developed.

[5 marks]

(g) Describe the characteristics of an object oriented design. [5 marks]

**QUESTION TWO (20 MARKS)**

(a) Discuss the merits and demerits of inheritance in object-oriented design. [10 marks]

(b) Explain the key aspects of rapid application development (RAD) methodology. [10 marks]

**QUESTION THREE (20 MARKS)**

(a) Discuss the various user interface evaluation techniques.

[10 marks]

(b) Describe the design factors to be considered in error message wording. [10 marks]

**QUESTION FOUR (20 MARKS)**

(a) Define modular decomposition. [2 marks]

(b) Discuss function-oriented pipelining. [8 marks]

(c) Discuss the various event-based control styles. [10 marks]

**QUESTION FIVE (20 MARKS)**

(a) Discuss the system change-over methodologies. [10 marks]

(b) Explain the merits of a conceptual database design. [10 marks]