JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATION 2012/2013

1ST YEAR 1ST SEMESTER EXAMINATION FOR THE DEGREE OF MASTERS IN INFORMATION SYSTEMS

KISUMU LEARNING CENTRE

COURSE CODE: IIS 5112.

TITLE: OBJECT ORIENTED TOOLS & TECHNIQUES

DATE: 15/4/2013 **TIME: 9.00-12.00NOON**

DURATION: 3 HOURS

INSTRUCTIONS

1. **This paper contains FIVE (5) questions**
2. **Answer question 1 (Compulsory) and ANY other 2 Questions**
3. **Write all answers in the booklet provided**

Question 1 – 20 Marks

a. Describe the following terms used in Object Oriented Programming
   i. Class (4marks)
   ii. Object
b. Explain the different phases of Object Modeling Technique (4marks)
c. Explain associations in object oriented analysis (2marks)
d. Discuss five concepts of Object Oriented Programming with suitable examples (10marks)

Question 2 – 20 Marks

a. Write a program that demonstrates how C++ class can inherit members from more than one class (8marks)
b. Explain the importance of evaluation in object oriented tools and techniques (6marks)
c. Explain Rumbaugh model of object oriented analysis (6marks)

Question 3 – 20 Marks

a. Explain why Object-oriented analysis and design (OOAD) is important in Object Oriented Programming (5marks)
b. Implement Polymorphism using C++ programming. Use class shape (10marks)
c. Explain reusability and four strategies used in implementation of reusability (5marks)

Question 4 – 20 Marks

a) Explain concept of abstraction with relevant example (2marks)
b) Any C++ program where you implement a class with public and private members is an example of data abstraction. Write a C++ program that shows the use of abstraction (12marks)
c) Explain any five components of use-case diagram. (6marks)

Question 5-20marks

a) Write a C++ program to demonstrate use of a class (6marks)
b) Discuss the differences between design patterns and Frameworks (6marks)
c) Explain the following tools and techniques in object oriented analysis and design modeling (8marks)
   i. Use case diagram
   ii. Activity diagram
   iii. State machine diagram
iv. Interaction diagrams