

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

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

# **UNIVERSITY EXAMINATIONS 2014/2015**

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

**ICS 2104 : OBJECT ORIENTED PROGRAMMING I**

**DATE: AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS:**

**ANSWER QUESTION ONE [COMPULSORY] AND ANY OTHER TWO QUESTIONS**

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**QUESTION ONE [30 MARKS]**

1. Using a diagram distinguishing between Bidirectional and composition types of association [4 marks]
2. Discuss the benefits of object oriented programming [4 marks]
3. Distinguish between the following terms:
4. Objects and classes [2 marks]
5. Data abstraction and data encapsulation [2 marks]
6. Dynamic binding and message passing [2 marks]
7. Describe how inheritance is applied in object oriented programming [3 marks]
8. Explain how are data functions organized in an object-oriented programs? [3 marks]
9. Describe what is the use of constructor in object oriented programming [2 marks]
10. State and explain the access modifiers used in object oriented programming [6 marks]
11. Why do we need the pre-processor directive #include <iastream>? In an object oriented program. [2 marks]

**QUESTION TWO [20 MARKS]**

1. Write a program which inputs a date in the format dd/mm/yy and output it in the format month. dd, year for example, 25/05/14 becomes:May 25, 2015. [10 marks]
2. Describe the features that differentiate object oriented programming languages [6 marks]
3. Highlight some of important points about destructors. [4 marks]

**QUESTION THREE [20 MARKS]**

1. Discuss the guidelines on access modifiers that good programming practice recommends [6 marks]
2. Differentiate between early binding and late binding in object oriented programming [4 marks]
3. Using an example of a simple program, explain what you understand by inline functions [4 marks]
4. Describe any three forms in which a constructor can take its shape [6 marks]

**QUESTION FOUR [20 MARKS]**

1. Distinguish between encapsulation and polymorphism as used in object oriented programming [4 marks]
2. How does a main ( ) function in C++ differ from amin ( ) in C ? [3 marks]
3. Write a C++ program that will ask for a temperature in Fahrenheit and display it in Celsius [2 marks]
4. Outline the promising areas for application of opp [4 marks]
5. Explain the characteristics of real-world objects. [4 marks]