

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

**JOMO KENYATTA UNIVERSITY**

**OF**

**AGRICULTURE AND TECHNOLOGY**

**UNIVERSITY EXAMINATIONS 2016/2017**

**YEAR 2 SEMESTER II EXAMINATION FOR THE DEGREE OF BACHELOR OF BUSINESS INFORMATION TECHNOLOGY/BACHELOR OF SCIENCE INFORMATION TECHNOLOGY**

**ICS 2104: OBJECT ORIENTED PROGRAMMING I**

**DATE: December 2016 TIME: 2 HOURS**

**INSTRUCTIONS: Answer question ONE and any other TWO questions**

**QUESTION ONE (30 marks)**

1. Using appropriate examples, explain the following OOP concepts;
2. Class (3marks)
3. Data hiding (3marks)
4. Message passing (3marks)
5. Dynamic binding (3marks)
6. Object (3marks)
7. Using the inbuilt library MAX\_VALUE method, write a Java program that will print on the console screen the maximum values of the following java primitive data types can hold;
8. Int data type (3marks)
9. Boolean data type (3marks)
10. Short data type (3marks)
11. Long data type (3marks)
12. Byte data type (3marks)

**QUESTION TWO (20 marks)**

1. Differentiate between Java input methods of print () and println () (5marks)
2. Write a snippet code that will create an intant object myInput from system.in() method. (5marks)
3. Write a program that will prompt a user to enter two CAT marks from keyboard called CAT 1 and CAT 2 and return an average Final CAT (10marks)

**QUESTION THREE (20 marks)**

1. Write a java program that has the following details
2. Has a class called vehicle
3. Has two class variables colour and speed
4. Has a method to print colour and speed
5. Has both single and multiple line commands (10marks)
6. Write a program that has a method identification that will return the national ID no. The program should prompt user to enter his/her ID no. to be passed to the identification method and display on the screen console. (10marks)

**QUESTION FOUR (20 marks)**

1. In Africa, the big five game animals are: Lion, Elephant, Buffalo, Leopard and Rhinocerous. Using a for-loop and an array, write a program to display a list of Big five game animals. (7marks)
2. Using a while-loop, write a program that will prompt a user to enter 2 intergers and return their sum. To exit the loop the user must enter zero. (7marks)
3. Write a program with class name person with a parental constructor. The constructor should accept 2 variables (6marks)

**QUESTION FIVE (20 marks)**

Greenfoot is free environment for Java programming for creating 2D animation, simulations and Games. Discuss the following Greenfoot input methods with respect to the functionalities and type of parameter they accept

1. isAtEdge() method (4marks)
2. isTouching () method (4marks)
3. turn() method (4marks)
4. removeTouching () method (4marks)
5. getRandomNumber () method (4marks)