



**CRAWFORD UNIVERSITY, FAITH CITY, IGBESA**

**COLLEGE OF NATURAL AND APPLIED SCIENCES**

**DEPARTMENT OF COMPUTER AND MATHEMATICAL SCIENCES**

**HARMATTAN SEMESTER**

**SESSION: 2023/2024**

**COURSE CODE: CSC 415 COURSE TITLE: COMPUTER PROGRAMMING WITH JAVA**

**UNITS: 3**

**TIME: 2HOURS**

**ANSWER QUESTION (1) AND ANY TWO (2) QUESTIONS**

- 1a. Pa Daisi is a grandparent who has a lot of properties, which include flocks of birds, donkeys, cows, and cars. He has a son who later gave birth to a beautiful daughter called "Ashowo". Ashowo, while preparing for her second semester, felt sick and went home. On getting home, she found out that her grandpa was sick and about to pass away. She rushed down to the hospital just to say goodbye to her lovely grandpa, but she was too late. Ashowo wept bitterly. Under the pillow was a piece of paper for Ashowo; Grandpa already gave everything to her. Ashowo did not only get all these properties from her grandpa, but her dad also gave her a new wristwatch. Ashowo was happy at last for being a wonderful daughter. As a Java programmer, write a Java program to display Ashowo's surname and all her wealth. **10mrks**
- b. Write a full Java code for the constructor below. Your program should display the color, brand, and the number of plugs.
- ```
public Car( )  
{  
}
```
- 10mrks**
- c. Write a Java code with recursive method to find the sum of the first 30 terms of the following sequence 4,4,8,12,20..... **10mrks**
- 2a. State four (2) differences between a class and an object **2mrks**
- b. Explain the concept of " Hierarchical inheritance" with a java program **8mrks**
- c. Write a java program to find the product of all numbers divisible by 2 between 1-100 **5mrks**
- 3a. State four (4) differences between abstract method and a recursive method **4mrks**
- b. Create an interface called "food" with the following methods type() and recipe(). Hence, write a java program to implement it. **8mrks**
- c. List six (6) applications of android in the market **3mrks**
- 4a. Write a java applet program to display "I love OOP exam" **5mrks**
- b. Write Java code to explain the concept of polymorphism **10mrks**
- 5a. Write Java code to demonstrate the relationship between a college and a department **5mrks**
- b. Write a Java program using recursive method to find (n-1)! **10mrks**