NATIONAL OPEN UNIVERSITY OF NIGERIA

University Village, Plot 91, Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi, Abuja

Faculty of Sciences

July 2017

Course Title: Introduction to Object-Oriented Programming
Course Code: CIT 383 – (2 Credits)

Answer Question 1 and any other three questions in $2^1/_2$ Hours.

1(a) Explain the term " Object Oriented Programming Language" List three main features of Object Oriented Programming. Outline three popular Object Oriented Languages (9 marks)

1(b) What is the difference between a Class and an Object? (8 marks)

1(c) What do you understand by the term "methods"? List three (3) examples of methods (8 marks) (8 marks)

2(a) What is the value of x after each of the following statement is
executed:

i. x=Math.abs(-8.5);
ii. x=Math.floor(-3.7);
iii. x=Math.ceil(2.6);
iv. x=Math.floor(4.1);
v. x=Math.ceil(-2.5);
vi. x=Math.pow(3,4);
vii.x=Math.ceil(-Math.abs(-5+Math.floor(-3.2)));
(1 mark each)

2(b) List the three (3) logical operators that can be directly overloaded for a class (3 marks)

2(c) What do you understand by Operator Overloading (5 marks)

3a. Write a short note on each of the following:
    (i)   Overloaded Method and Overridden Method
    (ii)   Local Variables and Instance Variables
    (iii)   Set and Get Methods
              (3 marks each)

3b. What do you understand by Recursive Operator   (3 marks)

3c. Mention the three (3) ways to call a method   (3 marks)

4(a) Create a class Student that has a field birthdate which is of the date type.

The class should have methods that can display the first name, last name and the birth date of students. (7 marks)

4(b) Explain the term Polymorphism and give example (5 marks)

4(c) Enumerate three (3) examples of Message passing styles (3 marks)

5(a) Write short notes on three of the following:

(i)   Information-hiding

(ii)   Code re-use

(iii)   Pluggability and debugging ease
        (2 marks each)

5(b)Find the values of the following:

(i)   Max(-4, -8) = r

(ii)   Min(-6,-9) = s

(iii)   Pow(4, 2) = t

(iv)   Sqr(900) = u

(v)   ABS(-80) = v

        (1 mark each)

5(c) With the help of a diagram describe Modularity and its merits (4 marks)