National Open University of Nigeria, 91 Cadastral Zone NnamdiAzikiwe Express Way, Jabi Abuja.

Faculty of Sciences

Course Title: Introduction to Object-Oriented Programming

Course Code: CIT 383 – (2 Credits)

Total Score is 70 and each question carries $17^{1}/_{2}$ marks

Answer any four (4) questions in $2^{1}/_{2}$ Hours.

1(a) Describe the term “Object”(4 marks)

1(b) Write short notes on three of the following:

(i) Modularity
(ii) Information-hiding
(iii) Code re-use
(iv) Pluggability and debugging ease
(3 marks each)

1(c) Outline three examples of Message passing styles ($4^{1}/_{2}$ marks)

2(a) With the help of a diagram describe Modularity and its merits(7 marks)

2(b) Explain the term “ Object Oriented Programming Language” with examples (6 marks)

2(c) Outline three advantages of using methods.($4^{1}/_{2}$ marks)

3(a) Describe an inheritance in Object Oriented Programming? (7 marks)
3(b) Differentiate between a Superclass and a Subclass (6 marks)
3(c) List three main features of Object Oriented Programming?($4^{1}/_{2}$ marks)

4(a).Explain the term “Operator Overloading”” (7 marks)

4(b). List and explain three key restrictions to overloading the conversion operators (6 marks)

4(c).List the three (3) logical operators that can be directly overloaded for a class ($4^1/_2$ marks)

5(a). Explain the term "**downcasting**" (5 marks)
5(b). List and explain two main types of polymorphism. Give an example of each. (8 marks)
5(c).Enumerate, giving examples, any three (3) examples of Message passing styles ($4^1/_2$ marks)

6(a). Evaluate the value of x after each of the following statement is executed:

i. x=Math.abs(-4.5);
ii. x=Math.floor(-3.7);
iii. x=Math.floor(4.1);
iv. x=Math.ceil(-2.5);
v. x=Math.pow(3,4);
vi.x=Math.ceil(-Math.abs(-5+Math.floor(-3.2)));

($1^1/_2$ marks each)

6(b). Explain the term Software Reusability and outline two merits (4 marks)

6(c) List three popular Object Oriented Languages? ($4^1/_2$ marks)