NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
2023_2 EXAMINATIONS_

COURSE CODE: CIT 383
COURSE TITLE: INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING
CREDIT: 2 UNITS
TIME ALLOWED: 2 HOURS
INSTRUCTION: ANSWER QUESTION 1 AND ANY TWO (2) OTHERS

QUESTION ONE. (30 Marks)

a. Create a non-executable class that has a private instance variable that can hold the first name of a student. Your class should contain methods to assign values to and retrieve values from the instance variable. *(8 Marks)*
b. Differentiate between a default constructor and a no argument constructor? *(7 Marks)*
c. Explain the concept behind garbage collection. *(8 Marks)*
d. Using a schematic diagram differentiate between overridden and inheritance? *(7 Marks)*

QUESTION TWO. (20 Marks)

a. Differentiate between an abstract class and a concrete class. *(6 Marks)*
b. Describe what is meant by conversion operator overloading *(6 Marks)*
c. Write a program that will overload a conversion operator. *(8 Marks)*

QUESTION THREE. (20 Marks)

a. Give four properties of abstract data type (ADT) *(6 Marks)*
b. Discuss concisely on the types of polymorphism? *(8 Marks)*
c. List six (6) examples of passing message style. *(6 Marks)*

QUESTION FOUR. (20 Marks)

a. What is the difference between a Class and an Object? *(8 Marks)*
b. Write a program that computes the Area of a sphere. *(12 Marks)*

QUESTION FIVE. (20 Marks)

a. Discuss four (4) benefits of bundling code into individual software objects? *(12 Marks)*
b. Discuss concisely encapsulation and a program to buttress your explanation. *(8 Marks)*