NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
FACULTY OF COMPUTING
DEPARTMENT OF COMPUTER SCIENCE
2025_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 TW0 (2) OTHERS

QUESTION ONE. (30 Marks)

a.   Create a non-executable class that has a method that computes factorial.   *(8 Marks)*
b.   How is an object 's instance variables initialised if a class has only a default constructor?
                                                                                (6 Marks)
c.   Explain the concept behind garbage collection.   *(8 Marks)*
d.   Explain elaborately how does message passing affect other programming model? *(8 Marks)*

QUESTION TWO. (20 Marks)

a.   Differentiate between an instance variable and a static field?   *(8 Marks)*
b.   Define method overloading and describe with examples its usefulness?   *(9 Marks)*
c.   What is another name given to a member of class and also give their category?   *(3 Marks)*

QUESTION THREE. (20 Marks)

a.   How does operator overloading differ from method overloading?   *(8 Marks)*
b.   Create an executable class and instantiate two objects of the StudentClass3 and display the
        values of their instance variables.   *(12 Marks)*

QUESTION FOUR. (20 Marks)

a.   What is method in Java and write a program to illustrate your answer.   *(6 Marks)*
b.   Give five (5) advantages of methods in Java.   *(5 Marks)*
c.   Define Polymorphism and give an instance of polymorphism by backing it up with some lines
        of codes.   *(9 Marks)*

QUESTION FIVE. (20 Marks)

a.   Can a non-default constructor and a default constructor be used in a class?   *(4 Marks)*
b.   Define inheritance and give an instance of the usage?   *(4 Marks)*
c.   Differentiate between public, private and protected variables?   *(12 Marks)*