NATIONAL OPEN UNIVERSITY OF NIGERIA
FACULTY OF SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
EXAMINATION QUESTIONS
2024_2 EXAMINATION

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 an executable class that shows how the instance variables of the *SetGetClass2* can be manipulated by the methods of the class.   *(8 Marks)*
b.   Discuss what you understand by constructor overloading?   *(8 Marks)*
c.   Explain in details the concept of interfaces in Object Oriented Programming context.   *(8 Marks)*
d.   Differentiate between Predefined classes and User defined classes *(6 Marks)*

QUESTION TWO. (20 Marks)

a.   Expatiate the concept of dynamic binding and static binding.   *(8 Marks)*
b.   Describe in details how you can enable the short- circuit operator. *(12 Marks)*

QUESTION THREE. (20 Marks)

a.   What is the value of x after each of the following statement is executed? *(12 Marks)*

   i. $x = Math.abs(-7.5)$;   *(1.5 Marks)*
   ii. $x = Math.floor(-2.7)$;   *(1.5 Marks)*
   iii. $x = Math.ceil(6.3)$;   *(1.5 Marks)*
   iv. $x = Math.flooe(4.1)$;   *(1.5 Marks)*
   v. $x = Math.ceil(-2.5)$;   *(1.5 Marks)*
   vi. $x = Math.pow(4,6)$;   *(1.5 Marks)*
   vii. $x = Math.pow(7,2)$;   *(1.5 Marks)*
   viii. $x = Math.ceil(99.001)$;   *(1.5 Marks)*

b.   Mention the four (4) logical operators that can be directly overloaded for a class. *(4 marks)*

c.   List in details four (4) examples of Message passing styles. *(4 marks)*

QUESTION FOUR. (20 Marks)

a. What are the Importance of Data Structure Encapsulation? *(8 Marks)*
b. What are the differences between interfaces and abstract classes? *(6 Marks)*
c. How is problem-solving with object-oriented design (OOD) initiated? *(2 Marks)*
d. Differentiate between a public and a private access modifier? *(4 Marks)*

QUESTION FIVE. (20 Marks)

a. Create a class that has a String instance variable and an int instance variable, in the class, create a constructor that has parameters that uses these instance variables as its data. *(8 Marks)*
b. What is the purpose of the keyword '*new*'? *(2 Marks)*
c. Discuss what happens to a field that was defined in a subclass and accessible in its superclass. *(6 Marks)*
d. Define Polymorphism. *(4 Marks)*