



LAGOS STATE UNIVERSITY OF SCIENCE AND TECHNOLOGY, IKORODU
COLLEGE OF BASIC SCIENCES
DEPARTMENT OF COMPUTER SCIENCES

FIRST SEMESTER EXAMINATION 2024/2025 ACADEMIC SESSION

Programme: B.Sc. Computer Science, Mathematics, Industrial Mathematics, Industrial Chemistry, Chemistry and Statistics

Course Title: Computer Programming I

Course Unit: 3

No of Students: 500

Instruction: Attempt Any Four (4) From Six (6) Questions

Course Code: COS 201

Class Level: 200

Time Allowed: 3 Hours

Question One

- What is an identifier in C++? (2 marks)
 - Write a programming language that will produce correct size of various data types, use C++ Language. (6 marks)
- List the four (4) pillars of Object-oriented programming. (2 marks)
- List ten (10) samples of Object programming Languages you know. (5 marks)

Question Two

- Explain the following
 - Assignment statements
 - Operators
 - Operand
 - Expression (8 marks)
- Write a C++ program to compute the average of five courses (7 marks)

Question Three

- Code can be executed in either way using sequentially or selectively (if or switch statement) or repetitively (for, while or do while statement). Briefly discuss each (10 marks)
- Write the syntax for each control structure above (3a) (5 marks)

Question Four

- Define the following Object Oriented programming concept:
 - Class
 - Polymorphism
 - Inheritance
 - Abstraction
 - Encapsulation (10 marks)
- Write a C++ program that reads an article number, a quantity, and a unit price from the keyboard and outputs the data on screen (5 marks)

Question Five

- Explain the concept of functions in C programming language (2½ marks)
 - Show by example how a function is defined. (2½ marks)
- With the help of a function, write a program in C that accepts the following details from a user to calculate the salary of an employee: *Employee Identification*

Number, Employee Name, Grade level, Basic salary, allowances, and cooperative deductions. Use the calculations that follow to generate the output: (10 marks)

Net Salary = (basic salary + allowances) - deductions

Allowances = House Rental Allowance (HRA) + Transport Allowance + Learned Society allowance

Deductions = Cooperative deductions + Taxes
Taxes are deducted at the rate of 15% of the Basic salary

HRA is based on grade level of the employee as shown in the table that follows:

Grade Level	HRA
7	100%
6	60%
5	50%
4	30%
3	25%
2	15%
1	10%

Question Six

- Explain each of the following:
 - The standard input/output media (2 marks)
 - Input/output through files (2 marks)
- Consider the portion of C program that follows and generate the likely output

```
#include <stdio.h>
```

```
Void main ()
```

```
{
```

```
    Int a = 10;
```

```
    Float b = 24.678;
```

```
    Char ch = 'A';
```

```
    Printf("integer data = %d", a);
```

```
    Printf("float data = %f", b);
```

```
    Printf("character = %c", ch);
```

```
    Printf("This prints the string");
```

```
    Printf(" %s", This also prints a string");
```

(5 marks)

- Write a program in C to sort the element of the following array:

Array_Score [10, 40, 90, 60, 70] 6 marks)