SCHOOL OF COMPUTING AND ENGINEERING SCIENCES (SCES)
BACHELOR OF SCIENCE IN COMPUTER NETWORKS AND CYBER SECURITY
END OF SEMESTER EXAMINATION
CNS 1102: INTRODUCTION TO PROGRAMMING

DATE: 17th NOVEMBER 2022   Time: 2 Hours

Instructions
1.   This examination consists of **FIVE** questions.
2.   Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

Question One [30 Marks]

a) Explain the following 5 terms as used in Computer programming: **[10 Marks]**

   i. Program   iv. Algorithm

   ii. Array   v. Control structure

   iii. Function

b) Identify the errors in each line of code below. Give your reasons for each error. **[10 Marks]**

```
int main ( )
{
  // program to with arrays
  float y(4) = {0.5, 0.4, 0.8, 1.2};
  y[4] = 1.4
  float y = 6;
  cout>>y;
}
```

c) Discuss 5 points that highlight the importance of programming to Strathmore University. **[10 Marks]**

Question Two [15 Marks]

a) Using code segments, differentiate between an if-else-if statement and a switch-case statement. **[6 Marks]**

b) Write a C++ program that prompts a user to choose an activity from table shown below. The program should display the price of the chosen activity. **[9 Marks]**

Activity	Price
Biking	500
Horse riding	2000
Kayaking	1000

Question Three [15 Marks]

a) Write a C++ program that uses a loop to display all the elements of a float array with 9 elements. **[6 Marks]**

b) Using code segments, differentiate between a do-while, while-loop and for-loop statements. **[9 Marks]**

Question Four [15 Marks]

a) Using code segments, describe at least 5 operators that can be used in a C++ program. **[5 Marks]**

b) Using a sample program, describe the basic structure and main components of a C++ program. **[10 Marks]**

Question Five [15 Marks]

a) Using examples, explain the importance of control structures in a C++ program. **[6 Marks]**

b) Write a C++ program that implements the following 3 functions: **[9 Marks]**

- a function that inputs the following details from a user (*name, gender, date of birth*).

- a function that computes and returns the age of the user, given the date of birth.

- a function that prompts the user to input his/her details and displays them together with the age.