CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE

COSC 121: COMPUTER PROGRAMMING

STREAMS: **TIME: 2 HOURS**

DAY/DATE: THURSDAY 13/12/2018 **8.30 A.M. – 10.30 A.M.**

INSTRUCTIONS:

- **Answer question 1 and any other two.**

Question 1: (30 Marks)

(a) Discuss Structured Programming [2 Marks]

(b) Differentiate between Compiler and Translator [2 Marks]

(c) State and explain three main components of the CPU [6 Marks]

(d) List four functions of the operating system [4 Marks]

(e) Write a program that asks you to input an integer and a floating-point number and displays the value. [4 Marks]

(f) Using examples, explain three types of errors common in a C program. [6 Marks]

(g) Loops causes a section of your program to be repeated a certain number of times. Using a suitable example, discuss the three type of loops in C [6 Marks]

Question 2: (20 Marks)

(a) What is variable initialization? [2 Marks]

(b) List three Advantages of the Top-Down Design Method [3 Marks]

(c) Write a C program to calculate the average of a set of N numbers. [5 Marks]

(d) Discuss three types of computer networks [6 Marks]

(e) Differentiate between system software and application software [4 Marks]

Question 3: (20 Marks)

(a) Explain five stages in a computer program compilation process. [10 Marks]

(b) State and explain three elements of user-defined functions. [6 Marks]

(c) Explain the two major differences between main memory and secondary memory in a computer system [4 Marks]

Question 4: (20 Marks)

(a) Explain what you understand by an algorithm. Briefly describe the properties of an algorithm. [3 marks]

(b) Write an algorithm that reads two values, determines the largest value and prints the largest value with an identifying message. [4 marks]

(c) Draw a flow chat for the algorithm on Question 4B above. [4 marks]

(d) Write a function that compares two values and returns the largest of the two [5 marks]

(e) Convert decimal 67 to its binary equivalent [4 marks]

Question 5: (20 Marks)

(a) The following program is meant to add two integers. Answer the following questions.

```
1.  /* Addition program */
2.  #include <sdio.m>
3.  int main()
4.  {
5.  int integer1, integer2, sum
6.  Cin( Enter first integer\n );
7.  scanf( %d, &integer1 );
8.  Cin( Enter second integer\n );
9.  scanf( %d, &integer2 );
10. sum = integer1 + integer2;
11. printf( Sum is %f\n);
12. return 0;
13. }
```

i. Correct the errors in the code below [3 Marks]

ii. Provide sample output and in the correct format [2 Marks]

iii. Insert comments in the program explaining every line [3 Marks]

(b) Differentiate between intranet and extranet [4 Marks]

(c) The table below shows bonus point for staff members at Goodluck limited

Index	**A**	**B**	**C**	**D**	**E**
	NAME	**MONTH 1**	**MONTH 2**	**MONTH 3**	**MONTH 4**

1	James	48	89	65	89
2	Mary	54	76	68	80
3	Korir	17	88	76	86
4	John	99	60	65	58

Use the information above to answer the questions below.

i. Write a formula and function in MS Excel that would calculate the mean score for Mary. [3 Marks]

ii. Write a formula and function in MS Excel that would calculate the total score of John. [2 Marks]

iii. Write a function in MS Excel that would compute the highest score in month 3 . [3 Marks]
