GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS
MAY - AUGUST 2018 SEMESTER

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

COURSE CODE: BSCS 106

COURSE TITLE: INTRODUCTION TO PROGRAMMING

DATE: 8 AUGUST 2018   **TIME: 8.00 AM – 11.00 AM**

INSTRUCTIONS TO CANDIDATES

1. SECTION A IS **COMPULSORY.**
2. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
3. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
4. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

SECTION A: COMPULSORY

Question One

a) Outline any five skills every programmer must possess   [5 marks]

b) Discuss any five trends in programming today   [10 marks]

c) Explain any two differences between structured programming and object oriented programming   [4 marks]

d) Using an example, explain the concept of recursion in a program   [6 marks]

e) Write a program that accepts five integers, stores them in an array named 2018 and finds their sum   and average   [8 marks]

f) Write an algorithm that can sort the items in the array above in ascending order

[7 marks]

SECTION B: ANSWER ANY THREE QUESTIONS

Question Two

a) Explain two types of functions in programming and give an example in each case

[6 marks]

b) Write a program that prompts a user to enter their PIN to access an ATM service. If the user enters the wrong PIN more than three times the message "BLOCKED" is displayed on the screen   [6 marks]

c) Describe any four types of data types in C programming   [4 marks]

d) Outline any four variable naming conventions in C programming   [4 marks]

Question Three

a) Describe any three software testing strategies   [6 marks]

b) Explain the output of the following program   [5 marks]

```
int sum = 0;

for( ; ; ) ;

System.out.println( sum);
```

c) Describe dynamic memory allocation in an array and give an example   [9 marks]

Question Four

a) Write a program to convert a number from binary to decimal   [10 marks]

b) Write a program to calculate an employee's age given the date of birth   [5 marks]

c) Outline any five benefits of software documentation   [5 marks]

Question Five

a) Design a flow chart for a program to get and set current system date and time   [5 marks]

b) Write a program to get and set current system date and time   [10 marks]

c) Discuss five characteristics of a typed language   [5 marks]