MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF COMPUTING AND INFORMATION TECHNOLOGY

DEPARTMENT OF INFORMATION TECHNOLOGY

UNIVERSITY ORDINARY EXAMINATION

2018/2019 ACADEMIC YEAR

THIRD YEAR **FIRST** SEMESTER EXAMINATION FOR, BBIT, BME, BMCS, BED SC, BIT, BSE, BCS, BCT

SCS101 – INTRODUCTION TO PROGRAMMING

DURATION: 2 HOURS

DATE: 18/12/2018

TIME: 2 – 4 P.M.

Instructions to candidates:

1. Answer question One and Any Other Two questions.
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION ONE (30 MARKS)

a) Using examples, define the following types of operators (6marks)
   i. Logical operators
   ii. Relational operators
   iii. Assignment operator

b) Discuss the importance of user requirement analysis during the software development life cycle (4marks)

c) Define an algorithm and discuss four properties an algorithm must process (5marks)

d) Write a program that allows the input of marks for five units and sum these up and display both the sum and average (6marks)

e) A program is required to calculate an employee's net salary from the gross pay. The net salary is given by gross pay less deductions.
   Deductions include; 25% of gross pay as tax kshs.250 as NSSF contribution and kshs 320 as NHIF contributions.
   i. Design a flowchart for the problem (3marks)
   ii. Implement the above problem using the C program (6marks)

SECTION B – ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION TWO (20 MARKS)

a) (i)define the term "variable" and state the importance of variable declaration (2marks)
   (ii) Explain the steps in program development (6marks)

b) Giving examples describe two types of constants in C programming (4marks)

c) Explain what an operator is and describe the types of operators used in C programming (4marks)

d) Using the information in the figure below, explain how the if….. else statement is used to allow entry af marks and output the grade (4marks)

MARKS	GRADE
70-100	A
60-69	B
50-59	C
40-49	D
Below 40	E

QUESTION THREE (20 MARKS)

a) Describe **TWO** types of function found in C language (4marks)

b) Explain the use of the following standard strong functional used in C programming (4marks)

i. Strepy( )
ii. Strlen ( )
iii. Strncpy ( )
iv. Strcup ( )

c) (i)Define an array and give its characteristics (4marks)
(ii) With examples differentiate between one dimensional and multi dimensional array (4marks)

d) Discuss any **FOUR** criteria which can be used to evaluate programming language (4marks)

QUESTION FOUR (20 MARKS)

a) A compiler and an interpreter are two examples of language processors. Compare and contrast. (4marks)

b) (i) Identify any four symbols used in a standard flow-chart diagram (4marks)
(ii) Distinguish between an algorithm and a Pseudocode (4marks)

c) With the help of a flowchart for each distinguish between a pre test loop and post test loop (6marks)

d) Differentiate global from local variables (2marks)