



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF INFORMATICS AND INNOVATIVE SYSTEMS
DEPARTMENT OF INFORMATION SYSTEM AND TECHNOLOGY
UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF ARTS IN
SPATIAL PLANNING/AGRIBUSINESS
1st YEAR 2nd SEMESTER 2016/2017 ACADEMIC YEAR
(MAIN CAMPUS)**

COURSE CODE: SCS 3123

COURSE TITLE: FUNDARMENTALS OF PROGRAMMING

EXAM VENUE: STREAM: BA SAPTIAL PLANNING/AGRIBUSINESS

DATE: APRIL 2017 EXAM SESSION:

TIME: 2 HOURS 150 students

INSTRUCTIONS

- 1. Answer Question 1 (Compulsory) and ANY other TWO questions**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION 1 (30 MARKS)

- a) Define the following programming language terms.
- i. Variable
 - ii. Compiler
 - iii. Interpreter
 - iv. Computer Program
 - v. Assembler (5 marks)
- b) Write a c program to display words "This is My First Program" (4 marks)
- c) List and Explain three advantages of C programming as a high –level language. (3 marks)
- d) By use of relevant examples, state the difference between a statement and a block. (2 marks)
- e) Explain using examples the usage of any three operators and precedence's to access modifiers in programming language. (6 marks)
- f) Outline TWO features of each of the following types of programming languages:
- i. Machine language,
 - ii. Assembly language,
 - iii. Structured languages. (6 marks)
- g) Explain why we need language translators in Programming (4 marks)

QUESTION 2 - (20 MARKS)

- a) Explain the term **control structures** as used in programming. (2 marks)
- b) With the aid of flowchart constructs, describe each of the following control structures:
- i. Selection
 - ii. Sequence
 - iii. Iteration (6 marks)
- c) What are the symbols used for different states in flow charts? Give a brief description of each (6 marks)
- a) A program is required to read in three numbers from the user then displays the greatest of the three numbers.
- Required:
- i. Draw a flow chart to show the sequence of steps.
 - ii. Write a C program that implements the above algorithm (6 marks)

QUESTION 3 - (20 MARKS)

- a) Briefly Explain the difference between Algorithm and Pseudocode (4 marks)
- b) Explain the Top-Down Approach as applied in programming. (4 marks)
- c) Write a Pseudocode and an equivalent of a C program that displays the string "HELLO WORLD" and your name on OUTPUT SCREEN. (6 Marks)
- d) Describe any THREE fundamental DATA TYPES used in C programming (6 marks)

QUESTION 4 – (20 MARKS)

- a) Define the following in relation to functions.
 - i. Function prototype
 - ii. Arguments (2 marks)
- b) Explain any two advantages of partitioning and program into functions (4 marks)
- c) Describe three types of errors in programming. (6 marks)
- d) Write C statements that would do the following:
 - i. Declare an integer variable
 - ii. Assign the value 8 to a variable identified as d.
 - iii. Increment the value stored in a variable identified as sum by 10;
 - iv. Output five new lines on the screen. (4 marks)
- e) Write a C program that uses the for...loop to display all even numbers between 20-50. (4 marks)

QUESTION 5 – (20 MARKS)

- a) Define the following terms as used in computer programming.
 - i. Debugging
 - ii. Testing
 - iii. Modularizing (6 marks)
- b) Distinguish between *while loop* and *a do while loop* programming (4 marks)
- c) What do the following standard library function do in c programming?
 - i. Printf()
 - ii. Scanf() (6 marks)
- d) Explain how an array can be declared and used in language C. (4 marks)