



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

BACHELOR OF ~~SCIENCE ELECTRICAL~~ SCIENCE IN ELECTRICAL AND
ELECTRONIC ENGINEERING

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

EEE 102 & EVC 102 – COMPUTER PROGRAMMING LEXAM

DATE:

TIME:

INSTRUCTIONS

Answer question ONE and any other TWO questions.

QUESTION ONE (30 MARKS)

a) Define the following terms as used in programming. (3 marks)

- Programming language
- ~~Program~~Linker
- Semantic

b) Explain the purpose of the following directives in C (6 marks)

- ~~r~~Return 0;
- ~~i~~Int main()
- ~~p~~Printf

c) Interpret the following sample program line by line. (3 marks)

▲ #include <stdio.h>
▲ main()
▲ {
 int *p, q;
 q = 100;

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    p = &q;
    printf("%d", *p);
    return 0;
}

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d) Using an example explain operator and operand (4 marks)

e) Differentiate between:- (4 marks)

i. Source code and Object code

ii. Variable and constant.

f) Describe using examples TWO ways in which constant values can be used in C expression statements. (4 marks)

g) Write C program that computes the area of a rectangle, given its dimensions. It should prompt the user for the length and width of the rectangle. [Area of rectangle if given by formula Area=length x width] (4 marks)

h)g)

h) Write a simple program to display a character and a float number typed in through the key board. (4 marks)

i) C Language is Portable and efficient. Explain (2 marks)

Write a simple program to display a character and a float number typed in through the key board. (8 marks)

QUESTION TWO (20 MARKS)

a) Explain TWO Advantages of modular programming. (4 marks)

b) After writing a code your friend a programmer complained because the program was not readable. Using example discuss how you can address this problem. (4 marks)

c) Differentiate between global and local variable? (4 marks)

d) Write a C program to ADD TWO integers. Define a function called add Numbers to add integers and display sum in main() function. (8 marks)

During a task to develop a program you chose C language. Explain advantages of C as a programming language. (8 marks)

QUESTION THREE (20 MARKS)

- a) You are required to write a program that displays the days of the month. Use array to achieve this. (6 marks)
- b) Distinguish between assembly language and Machine Language in programming (4 marks)
- c) During a task to develop a program you chose C language. Explain FOUR advantages of C as a programming language.
(48 marks)
- d) Pseudo-code is one of the tools that enable a programmer to describe and transform an algorithm into real source code. Write pseudo-code that can be used for comparing three numbers and displaying the largest number. (4 marks)
- e) Highlight at least TWO common data types in C language. (2 marks)
- d) Write a program that will output the day of the week when a number is entered from the keyboard. (10 Marks)

QUESTION FOUR (20 MARKS)

- a) State what the following translators do and describe how they work. (36 marks)
- i) Assembler
- ii) Compiler
- b) iii) Interpreter Write a simple program to display a character and a float number typed in through the key board.
(8 marks)
- Describe, with aid of examples, three types of errors that a programmer can encounter when programming.
- b) (6 marks)
- c) Write a C program that allows the user to enter any positive integer (comprising of two or more digits) and then the program will reverse the number using while loop. (7 marks)

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d) Using for loop, write a C program to display ODD numbers between 1 and 70. The program should not have user input

(4 marks)

e) Write a program that will output the day of the week when a number is entered from the keyboard. (10 Marks)

e) (6 marks)

QUESTION FIVE (20 MARKS)

Table 1 shows East Africa countries with their corresponding staple foods.

Use it to answer the question that follows

Country code	Name	Staple Food
1	Tanzania	Rice
2	Kenya	Ugali
3	Uganda	Matoke
4Any Number	Sudan	Bread
Any other Number	Invalid number	

Table 1

a) Draw a flowchart to represent the logic displaying the name of the country and its staple food when supplied with the country number (7 marks)

Write a C program to accept the country member-number. The program should then display the name and the staple food for the country based on the number entered. Use switch statement (8 marks)

b)

c) b) State five-THREE advantages of high level languages (3 marks)

d) Outline TWO ways in which comments can be represented in a C program. (2 marks)

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