



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

ELECTRONIC ENGINEERING: COMPUTER SYSTEMS

MODULE: C-Programming

PAPER NO: 322/22/M02

DURATION: 3 hours

NOVEMBER/DECEMBER 2025 EXAMINATION

REQUIREMENTS

Answer booklet

INSTRUCTIONS TO CANDIDATE

Answer all ten (10) questions.

This paper consists of 4 printed pages.

QUESTION 1

a)	Structured programming	(2 marks)
b)	Algorithm	(2 marks)
c)	Pseudo code	(2 marks)
d)	Flow chart	(2 marks)
e)	Executable file	(2 marks)

a) What is the use of the following functions in C?

- i) Print F () (1 mark)
- ii) Scan F () (1 mark)

b) Describe the following terms:

- i) Constant (2 marks)
- ii) Identifier (2 marks)
- iii) Recursion (2 marks)
- iv) Variable (2 marks)

- a) Briefly explain the following terms:
 - i) Constant (1 mark)
 - ii) Variable (1 mark)
- b) Differentiate between global local variable. (2 marks)
- c) Martin used global variables in a program. Explain two (2) errors he is likely to encounter when executing the program. (4 marks)
- d) Briefly explain what is meant by type casting. (2 marks)

QUESTION 4

- a) Name the basic data types in C. (5 marks)
- b) Give five (5) modifiers available in the C programming language. (5 marks)

QUESTION 5

- a) Define a pointer. (2 marks)
- b) Explain how a pointer is declared in C language. (4 marks)
- c) State the advantages and disadvantages of pointers. (4 marks)

QUESTION 6

- a) Differentiate between a for loop and a while loop. (4 marks)
- b) Using any loop structure, write a C program that prints out the following numbers as shown below.

10

15

20

25

30

(6 marks)

QUESTION 7

- a) Define an array. (2 marks)
- b) How do you declare and initialise an array of integers. (4 marks)
- c) Explain the purpose of each of the following statements in a program:
 - i) Break (2 marks)
 - ii) Continue (2 marks)

QUESTION 8

- a) Write a program in C language that prompts a user to enter the age of a person. The program then displays the age and a message "You are an adult" whenever the age is greater than 18 years. (5 marks)
- b) Write a program in C language that accepts 10 numbers, store them in an array and display the numbers in reverse order. (5 marks)

QUESTION 9

- a) Explain the function of each of the following escape characters as used in the C programming language.

i) \ t (1 mark)

ii) \ n (1 mark)

iii) \\ (1 mark)

iv) \ a (1 mark)

v) \ r (1 mark)

- b) What will be the output of the following program:

```
# included <stdioih>
void main ( )
{
int a[5] = {5, 1, 15, 20, 25};
int i, j, m;
i= ++ a[1];
j= a[1] ++;
m= a[i ++];
print(& d, %d, &d; i, j, m);
}
```

 (3 marks)

- c) Explain dynamic memory allocation. (2 marks)

QUESTION 10

Write a program to find the greatest of the three numbers entered by a user. (10 marks)