

Part B

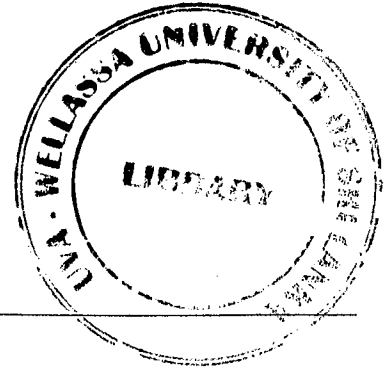
Instructions to candidates

Duration: One (01) hour

Number of questions: Two (02)

Answer all questions

Mark allocation: 60



01.

- a. Write an algorithm to calculate the average mark of three subjects for fifty (50) students. (5 mark)
- b. Draw a flowchart for the algorithm you wrote in part (a). (5 mark)
- c. Tabulate the characteristics of the **Interpreter** and the **Compiler**. (5 mark)
- d. Briefly explain the difference between **Variables** and **Constants** in C language. (5 mark)
- e. List the characteristics of **while** and **do while**. (5 mark)
- f. Explain the following methods of passing parameters into functions by highlighting their characteristics and advantages.
 - i. Call by value
 - ii. Call by reference(5 mark)

02.

- a. List the characteristics of the **Array** data structure. (5 mark)
- b. Write a code snippet to insert an integral element into one-dimensional (1D) array. (5 mark)
- c. Explain the logic behind the pointers in terms of how it works in C language. (5 mark)
- d. Modify the code snippet you wrote in (b) to accept five (5) integer values and insert them into a **pointer array**. (5 mark)
- e. Briefly describe the following terms.
 - i. Buffer
 - ii. Binary files(5 mark)

f. Rewrite the following program using pointers.

```
#include<stdio.h>
void main()
{
    int num1, num2, total;
    printf("\n Enter two numbers : ");
    scanf("%d %d", &num1, &num2);
    total = sum(num1, num2);
    printf("\n Total = %d", total);
    getch();
}
int sum(int a, int b)
{
    int t = a + b;
    return t;
}
```

(5 mark)