



Part B

Instructions to candidates

Duration: One (01) hour

Number of questions: Two (02) essay questions

Answer all questions

Mark allocation: 60



1.

- a. Consider the following pseudo code to calculate the Body Mass Index (BMI) of each person who is going to donate blood. Draw a suitable flow-chart for the given pseudo code.

```
input total_persons
for i=1 to total_persons
  input height
  input weight
  BMI = weight/(height)2
  if BMI >= 25 then
    output "you are Overweight"
  else if BMI >= 18.5 then
    output "you are Normal"
  else
    output "you are Underweight"
next i
```

(8 mark)

- b. Write short notes for the following

- i. C source code file
- ii. Header files in C

(6 mark)

- c. Briefly explain the steps of compiling and executing of a C program.

(4 mark)

- d. "All **switch-case** control structures can be rewritten using **if-else** statements but all **if-else** control structures cannot be replaced by **switch-case** statement. Do you agree with the statement? Justify your answer.

(6 mark)

- e. Explain the purpose of the components of a function declaration given below.

"return_type func_name(type variable1)"

(6 mark)

2.

- a. You are supposed to store a list of names of 20 students in the main memory for processing.
- Which technique you are going to use to store the given set of values?
 - Why did you select the above technique?
- (8 mark)
- b. List the main difference between **text files** and **binary files** in C language.
- (8 mark)
- c. Explain the logic behind the **pointers** in terms of how it works in C language.
- (4 mark)
- d. Rewrite the following program using pointers.

```
#include<stdio.h>
void main()
{
    int value1, value2, total;
    printf("\n Enter two values : ");
    scanf("%d %d", &value1, &value2);
    total = add(value1, value2);
    printf("\n Total = %d", total);
    getch();
}
int add(int a, int b)
{
    int t = a + b;
    return t;
}
```

(10 mark)