

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — APRIL, 2018

PROGRAMMING IN C

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Write the output of $5\%3$.
2. Why goto statement is not generally used for looping ?
3. What are multidimensional arrays ?
4. What is the use of NULL character in strings ?
5. Define files.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Write the C statements to declare a variable as integer and assign a value to it.
2. Explain about increment and decrement operators.
3. Write a program to find sum of first n natural numbers.
4. What is the need for user defined functions ?
5. Explain how to initialize two dimensional arrays with examples.
6. Compare the given strings S1 = "Hello" and S2 = "hello". Analyze the value returned by the compare function.
7. Explain about call by value and call by reference in functions.

(5 × 6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) List the rules for a valid variable name. 7
- (b) Write a program to find average_mark when total_mark and total_students are given. 8

OR

- IV (a) Briefly explain the format for input function scanf(). 7
- (b) Find the value of m. 8
- (i) `m = sizeof(int);`
- (ii) `float m = 0; int a = 2, b = 5; m = a + b;`
- (iii) `a = 10, b = 15; m = (a > b) ? 0 : 1;`

UNIT — II

- V (a) Explain the format of for statement. 7
- (b) Write a function power to find and return x raised to y, given x and y as integer. The value returned by the function must be double. 8

OR

- VI (a) Write short note on entry controlled and exit controlled loops. 7
- (b) Write a program to print the following pattern. 8
- ```

1
2 3
4 5 6
7 8 9 10

```

## UNIT — III

- VII (a) Explain about string handling functions strcmp( ) and strlen( ). 7
- (b) Write a program to find second largest number in a one dimensional array. 8

OR

- VIII (a) Write the format to declare and initialize string variables. 7
- (b) Write a program to find transpose of a matrix. 8

## UNIT — IV

- IX (a) Explain how to declare and initialize pointer variables. 7
- (b) Make a comparison on structures and unions on the basis of memory allocation and initialization. 8

OR

- X (a) Describe how a file can be opened to access it and to close it after accessing. 7
- (b) Briefly explain about dynamic memory allocation functions malloc and calloc. 8