

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2017**

PROGRAMMING METHODOLOGY

[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. Define an algorithm ?
2. If the variable Hours = 10, what is the value of the variable Salary after the following instruction has been executed: Set Salary = Hours * 8.
3. How many times "Good Morning" is get printed ?
for (i=2;i<10;i++)
 write "Good Morning"
endfor
4. Declare a one dimensional array to store marks of 50 students.
5. What is recursion ? (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Explain six relational operators.
2. Write a pseudo code to read a number and print whether it is divisible by 10 or not.
3. Explain CASE structure.
4. Write a pseudo code to print the multiplication table of a given number.
5. Write a pseudo code to declare a matrix having 5 rows and 6 columns and read the elements to the matrix.
6. Write a pseudo code to read 10 elements to an array and display it.
7. With an example explain how values can be passed from a main program to a subprogram. (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) Write an algorithm to read principal amount (P), interest rate (R), number of years (N) and print the interest. (Interest $I=PNR$) 4
- (b) Draw the flow chart for the above problem. 6
- (c) Write a pseudo code for the above problem. 5

Or

- IV (a) Explain any 3 flow chart symbols. 6
- (b) List the steps in program development cycles. Explain. 9

UNIT — II

- V (a) Differentiate pre-test and post-test loop. 6
- (b) Write a pseudo code to read a month number (from 1 to 12) and print the corresponding month (1-January, 2-February...). 9

Or

- VI (a) Explain the syntax of while ... loop with the help of a block diagram. 6
- (b) Write a pseudo code to read two numbers and find sum all the numbers divisible by 5 between them (both numbers - limits - are excluded). 9

UNIT — III

- VII (a) Explain linear search with the help of an example. 7
- (b) Write a pseudo code to find the sum of the first row of a 3×3 matrix. 8

Or

- VIII (a) What is a string? Explain. 6
- (b) Write a pseudo code to find the largest number in an array. 9

UNIT — IV

- IX (a) Explain scope of variable. 6
- (b) Write a pseudo code to read sides of a rectangle (b and h). By using a subprogram, find the area of the rectangle. (Area $A = b \times h$) 9

Or

- X (a) Write a short note on subprogram. 6
- (b) Write a pseudo code to find the factorial of a number using recursion. 9