

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/
COMMERCIAL PRACTICE - APRIL - 2021**

PROGRAMMING METHODOLOGY

(Maximum marks: 100)

(Time: 3 Hours)

PART – A

(Maximum marks: 10)

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

1. Define flowchart.
2. Evaluate the expression $((2+8)^2-20)/5-6$
3. Two arrays of the same size in which elements with the same subscript are related are called-----
4. Write the syntax to declare a two dimensional array.
5. Define recursion.

(5 x 2=10)

PART – B

(Maximum marks: 30)

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

1. Explain the steps in program development cycle..
2. Draw a flowchart to check whether the given number is even or odd.
3. Differentiate pre test and post test loops with examples.
4. Describe one and two dimensional arrays with example.
5. Write a pseudo code to input a string and then find the number of occurrences of a particular character in that string.
6. Explain the scope of a variable.
7. Write the different steps to create a sequential file.

(5 x 6=30)

PART – C

(Maximum marks: 60)

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

UNIT –I

III. (a) Explain different flowchart symbols. (10)

(b) Draw a flowchart to find the largest of given three numbers. (5)

OR

IV. (a) State the differences between syntax errors and logical errors with suitable examples. (8)

- (b) Write an algorithm to find out the area of a triangle. The three sides are given,
 $s = (a+b+c)/2$ $\text{Area} = \sqrt{s*(s-a)*(s-b)*(s-c)}$ (7)

UNIT-II

- V. (a) Write a pseudo code to input the number N between 1 and 7 and display the day of the week such as “Sunday” if N=1, “Monday” if N=2, etc . If the input number is not between 1 and 7 then display “Invalid Number”. Implement using case statement (9)
- (b) Differentiate break and continue statement with an example. (6)

OR

- VI. (a) Explain nested if statement with an example. (9)
- (b) Use a for loop to print the sum of integers from 1 to 100 (6)

UNIT-III

- VII. (a) Write an algorithm to print the transpose of a 2x3 matrix. (9)
- (b) Write short notes on multi-dimensional arrays. (6)

OR

- VIII. (a) Write an algorithm to find the length of a string stored in an array. (7)
- (b) Write a short note on arrays. (8)

UNIT-IV

- IX. (a) Design an algorithm to find the area of a rectangle. Use a subprogram to input the sides of the rectangle. Use function to calculate the area and a subprogram to display the result. (12)
- (b) Write the output of the following:
- Abs(-1.5)
Round (abs(-1.4))
Ceil (5.4) (3)

OR

- X. (a) Write the pseudo code to find the factorial of a given number using recursion. (9)
- (b) Explain different parameter passing methods with example. (6)
