

SECOND/THIRD SEMESTER DIPLOMA EXAMINATION IN ENGINEERING/  
TECHNOLOGY—MARCH, 2014

PROGRAMMING METHODOLOGY

(For II<sup>nd</sup> semester all branches except CP and CB and for III<sup>rd</sup> semester CB)

[Time : 3 hours

(Maximum marks : 100)

Marks

PART—A

(Maximum marks : 10)

I Answer all questions. Each question carries 2 marks.

1. If  $X = 5$  and  $Y = 4$ , give the value of the expression  $X * Y ^ 2/20$ .
2. List any two numeric data types.
3. Write the syntax to define a two dimensional array.
4. What is the difference between local and global variable ?
5. Define recursion.

(5×2=10)

PART—B

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

1. Explain how signed and unsigned numbers are represented in a computer.
2. List the various steps in problem development cycle.
3. Draw a flow chart to check whether given number is odd or even.
4. Write a pseudocode to input a string and then find the number of occurrences of a particular character in that string.
5. Write pseudocode to display colours of VIBGYOR using select-case.
6. Explain the method to insert a record in a sequential file.
7. Write a subprogram to calculate the factorial of a given number using recursion.

(5×6=30)

PART—C

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

UNIT—I

- III (a) Explain different flow chart symbols. 10
- (b) Explain increment and decrement operators with example. 5

OR

- IV (a) The total marks for 'N' students in a class is given. Write a pseudocode to calculate the highest mark. 6
- (b) Draw a flowchart for the above pseudocode. 5
- (c) What is meant by hierarchy of operations ? 4

## UNIT—II

- V (a) Write an algorithm to input the age of the user and check whether he is eligible to vote or not. [*Hint : Minimum age to vote is 18 years*] 8
- (b) Draw the flowchart of nested-if structure. 4
- (c) State defensive programming. 3

OR

- VI (a) Write a pseudocode to allow the user to enter a series of temperatures in degree Celsius (C) terminated by '0'. For each one find the corresponding temperature in degree Fahrenheit (F). [*Hint : The conversion formula is  $F = 9 * C / 5 + 32$* ]. 7
- (b) Explain pre test loops and post test loops with example. 8

## UNIT—III

- VII (a) The names of employee of an organization is stored in array 'Names'. Write a pseudocode to arrange them in alphabetical order. 8
- (b) Write short notes on multidimensional arrays. 7

OR

- VIII (a) Write an algorithm to calculate the sum of elements of a two dimensional matrix. 7
- (b) The names of players and their scores in a cricket match are stored in the arrays 'Players' and 'Scores' respectively. Identify the player who got the highest score. 8

## UNIT—IV

- IX (a) Explain different types of data files. 8
- (b) Write a recursive function to display first 'N' Fibonacci numbers. 7

OR

- X (a) Compare procedures and functions with suitable example. 10
- (b) Write a pseudocode to calculate the power of a number ( $X^y$ ) using function. 5