Total Pages : 3

BT–1/D-24   **41038**

PROGRAMMING FOR PROBLEM SOLVING

Paper–ES–105A

Time Allowed : 3 Hours]   [Maximum Marks : 75

Note : Attempt **five** questions in all, selecting at least **one** question from each Unit. All questions carry equal marks.

UNIT–I

1. (a) What do you understand by Algorithm? Write an algorithm to find the roots of a quadratic equation.

6

   (b) Solve the following :   9

      (i) $(135)_7 + (366)_7$

      (ii) $(FBD7.CD)_{16} + (98FE.5C)_{16}$

      (iii) $(59FD.45EA)_{16} = (?)_{10}$

2. (a) Solve the following :   9

      (i) $(69AB.92)_{12} = (?)_{10}$

      (ii) $(9A7)_{11} + (489)_{11}$

P. T. O.

(iii) $(536)_8 - (737)_8$ using 8' complement and write the proper steps.

(b) What do you understand by Algorithm? Write an algorithm to find the factorial of an integer number.

6

UNIT-II

3. (a) Write a program to reverse an integer number. 9

(b) Differentiate between entry-controlled and exit-controlled loop statements with suitable example.

6

4. (a) Write a program to check whether a character is a vowel or not using a switch statement. 7

(b) Write a C program to calculate the following series without pow () function : 8

$$x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots \cdots \cdots \frac{x^n}{n!}.$$

UNIT-III

(a) How user defined function can be created for passing the array, explain with suitable example. 8

(b) What is Recursion? Write a program to find the factorial of a number using recursion. 7

6. (a) Write a Program in C to reverse a string without using strrev(). 8

(b) What is Recursion? Write a program to find the Fibonacci series using recursion. 7

UNIT–IV

7. (a) Write a program to read an array from a File and Store the largest number in another file. 8

(b) Explain structure within structure with suitable example. 7

8. (a) Write a program to sort the array using call by reference. 8

(b) Write a program in C to store the records of Employees and calculate the total salary of each employee. 7