Roll No. ..... **Total Pages : 03**

BT-I/D-21 **41038**

PROGRAMMING FOR PROBLEM SOLVING
ES-105A

Time : Three 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) Solve the following : **8**

(i) $(9AB3)_{12} + (74A5)_{12}$

(ii) $(2452)_8 - (624)_8$

(b) What is the difference between an algorithm and pseudocode ? Also write an Algorithm and pseudocode for solving a quadratic equation. **7**

2. (a) Solve the following : **6**

(i) $(AC2F.CD)_{16} = (?)_8$

(ii) $(463)_8 - (132)_8$ using 8' complement.

(b) What do you understand by flow chart ? Draw flow chart for sort the array. **9**

Unit II

3. (a) Write a program to reverse the digit of a number. **8**

(b) Write a program to find the roots of a quadratic equation. **7**

4. (a) Write a program to find sum of the following equation : **8**

$$1 - X^3/3! + X^5/5! \ldots\ldots\ldots\ldots X^n/n!$$

(b) Write a program to find the whether a character is vowel or not using switch statement. **7**

Unit III

5. (a) Write a program to reverse the string without using string function. **8**

(b) How can array be passed to a function ? Explain with suitable example. **7**

6. (a) Write a program to check string for palindrome without using string function. **7**

(b) Write a program for returning arrays from functions. **8**

Unit IV

7. (a) How can the record be handled in C language using union ? Explain with suitable example. **7**

(b) Write a program to handle string-using pointer. **8**

8. (a) Explain the operators used on pointers with example. **7**

(b) Explain the use of structure within structure with suitable example. **8**