

Roll No.

Total Pages : 04

BT-2/M-19

32036

PROGRAMMING FOR PROBLEM
SOLVING
Paper I
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) Define flow-charts. Which symbols are used to draw flow-charts ? What are advantages and limitations of flow-charts ? Draw a flow-chart to find the roots of quadratic equation. 8
- (b) Briefly explain linker and loader. Is there any difference between them ? 4
- Differentiate compiler and interpreter. 3

2. (a) Perform the following conversion :

(i) $(B.2C)_{16} = (?)_8$

(ii) $(231.44)_8 = (?)_2$

(iii) $(36.625)_{10} = (?)_2$

(iv) $(4A.25)_{10} = (?)_{16}$

(v) $(101011000011)_2 = (?)_{16}$

$5 \times 2 = 10$

- (b) Define the following terms :

(i) CD-RW

(ii) DVD-ROM.

$2 \times 2\frac{1}{2} = 5$

Unit II

3. (a) What are Storage Classes ? How many types of storage classes are used in C-language ? Explain them. 7
- (b) Define conditional operator. Write its general syntax. Also write a program to print the smallest number out of three given numbers using conditional operator. 8
4. Explain the following terms with examples :
 - (a) Go to statement
 - (b) Continue statement
 - (c) Nested for loop
 - (d) While loop. 3+4+4+4

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2

Unit III

5. (a) Define 2-dimensional array. How these arrays are represented in memory. Write a program to print the transpose of a given 2-dimensional array of given size. 10
- (b) Define recursive functions. Write a program to print the factorial of a given integer number by using recursive function. 5
6. (a) What is the difference between character array and string ? Why we use null character in a string ? Write a program in c-language to check whether a given string is palindrome or not. 10
- (b) Differentiate formal and actual parameters with example. <http://www.kuonline.in> 5

Unit IV

7. (a) Define Pointers. Why are they important ? What is the use of indirection operator (*) ? Write a program using pointers to read an array of integers and print its element in reverse order. 8
- (b) Differentiate malloc() and calloc() functions. 4
- (c) What are the features of using pointers. 3

8. (a) Differentiate structure and union. Write a program in c-language to print the net salary of 150 employees if gross salary and deduction are known. 9
- (b) Write a program that count the number of characters and number of lines in a text file., 6