

Roll No.

Total Pages : 4

BT-2/M-20

32035

PROGRAMMING FOR PROBLEM SOLVING

Paper : 2 (two) (ES-105A)

Time : Three Hours]

[Maximum Marks : 75

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

UNIT-I

1. (a) Define input and output devices. Explain following input devices in brief:
 - (i) Keyboard.
 - (ii) Mouse. 5
- (b) Differentiate following:
 - (i) Impact and non-impact printers.
 - (ii) Primary and secondary memory. (2×5=10)
2. (a) Explain following languages with their advantages and limitations:
 - (i) Machine language.
 - (ii) Assembly language. (2×3½=7)
- (b) Perform following conversion:
 - (i) $(EF.2C)_{16} = (?)_2$.
 - (ii) $(36.05)_8 = (?)_{10}$. (2×2=4)

- (c) Using 2's complement method, perform following operations:

(i) $(1001)_2 + (0100)_2 = (?)$.

(ii) $(-23)_{10} + (45)_{10} = (?)$. (2×2=4)

UNIT-II

3. (a) What are the features of using C-language ? Explain them in detail.
- (b) How many storage classes does the C-language support ? Why do we need different types of such classes ?
- (c) Define unformatted input/output functions which are used in C language. Also give example to explain these functions. (3×5=15)
4. (a) What is the importance of switch case statement ? In which situations is a switch case statement desirable ? Also write its limitations. Write a program to print the days of a week by using switch statement. 8
- (b) What is difference between a while loop and do-while loop ? Write their general syntax. Also write a program using array declaration to generate first N terms of Fibonacci series. 7

UNIT-III

5. (a) Define an array. What type and range must an array subscript have ? Can an array index be negative ? Write a program in C-language to sort the number stored in an array in descending order. 9

- (b) Define strings. Write a program in C-language that accept two given string at runtime and append the first 10 characters of first string at the end of second string.

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6. (a) Differentiate following with example:

(i) Local and global variables.

(ii) Formal and actual parameters.

(iii) Static and register variables. (3×3=9)

- (b) Define built-in and user-defined functions. How they differ from each other ? Also write a program in C language using user-defined function to compute the sum of digits of a given integer number.

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UNIT-IV

7. (a) What is an array of pointers. How is it declared ? Which arithmetic operations are possible with pointers ?

(b) Explain the features of pointers.

(c) What is difference between call by value and call by reference ? Explain the call by reference by giving an example. (3×5=15)

8. (a) Define structure. How it differ from an array ? Write a program that takes book id, author name, publisher name and price for a book as input and print the same information as output.

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- (b) Define data files. Enlist the different file access modes that are available in C programming language. 4
- (c) What is the purpose of fopen() and fclose() function ? Is it mandatory to use this in a program that process a data file ? 3
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