Total No. of Questions :5]

PE12179

SEAT No. :

[Total No. of Pages : 4

[6581]-2410

F.E.

ESC-105-COM : FUNDAMENTALS OF PROGRAMMING LANGUAGES

(2024 Pattern) (Semester-I/II) (Credit System)

Time : 2½ Hours] *[Max. Marks : 60*

Instructions to the candidates:

1) *All five questions are compulsory, and for each question students must attempt any three out of the six sub-questions.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume Suitable data wherever necessary.*

Q1) Solve any three

a) List any three features that make C an important programming language. [4]

b) What is the difference between a keyword and an identifier in C? [4]

c) Explain how variables are declared in C. What are the rules and syntax for declaring variables? [4]

d) Explain the difference between a constant and a variable in C. [4]

e) Explain the purpose of using the const keyword when declaring a variable in C. [4]

f) Explain the role of the volatile keyword in C programming and when it is typically used. [4]

Q2) Solve any three

a) List the arithmetic operators in C with their symbols. [4]

b) Explain the difference between && (AND) and || (OR) logical operators in C. [4]

c) Explain any 4 bitwise operators in C. [4]

d) List the types of assignment operators available in C. [4]

e) How would you use relational operators to compare two numbers in C? Provide an example. [4]

f) Explain the difference between pre-increment (++i) and post-increment (i++) operators in C. [4]

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Q3) Solve any three

a) Explain while loop with a suitable example. [4]

b) Explain simple if statement if-else statement and nested if-else statement with suitable example. [4]

c) Write a program for finding factorial of a number. [4]

d) Explain for loop with continue and break statement. [4]

e) Describe how a "Switch" statement works and compare it to an "if-else" structure. [4]

f) Write a program that reads a number from the user and prints whether the number is positive, negative, or zero using an "if-else" statement. [4]

Q4) Solve any three

a) Explain how an array is stored in memory and how elements can be accessed using an index. [4]

b) Explain various function for reading and writing a string. [4]

c) Write a program that asks the user to input 10 numbers, stores them in a one-dimensional array, and then prints the sum of the numbers. [4]

d) Explain how a string in C is terminated and how this affects string operations. [4]

e) Explain any five String handling Functions with example. [4]

f) Write a program that reverses a string entered by the user without using built-in functions. [4]

Q5) Solve any three

a) Explain the concept of return values in C. How is the return type of a function determined? Provide an example of a function that returns an integer value. [4]

b) Write a C program that accepts two numbers from the user, swaps them using a function. [4]

c) Explain various Categories of Function. [4]

d) How do you initialize structures in C? Explain with an example of initializing a structure that holds a book's title, author, and price. [4]

e) Create a structure in C called Employee that holds the employee's name , ID and salary. Write a program to initialize a structure variable with values and display the employee's information. [4]

f) Differentiate Between Recursion and Iteration in function with suitable example. [4]