Total number of printed pages: 2

1st SEM MCA
2024
(DECEMBER)
COMPUTER APPLICATION
Paper : MCA-109 (C Programming)

Full Marks : 60
Pass Marks : 27
Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer the following 1x5=5

   (a) Which keyword is used to declare a constant in C?

   (b) How is the increment operator written in C?

   (c) Give an example of a valid variable name in C.

   (d) Write the syntax for a 'for' loop in C.

   (e) How do you include the standard input-output library in a C program?

Answer the following questions 2x5=10

   (a) What is the difference between 'while' and 'do-while' loops in C?

   (b) Explain the use of '#define' preprocessor directive in C with an example.

   (c) Write the syntax to declare an array of integers with 10 elements in C.

   (d) Describe the use of the 'return' statement in C functions.

   (e) Explain how to declare a pointer variable in C. Provide an example.

Answer any three of the following   5x3=15

(a) Describe the structure of a basic C program, including the 'main' function and headers.

(b) Write a C program to calculate the sum of all elements in an integer array.

(c) Explain the concept of 'switch' statement in C with a code example.

(d) Write a C program to check if a number is even or odd.

(e) Explain how to define and use functions in C with an example.

Answer any three of the following   10x3=30

(a) Write a detailed essay on the advantages and limitations of C programming for system-level development.

(b) Explain the different data types available in C, including their sizes and uses.

(c) Describe pointers in C in detail. Write a program to demonstrate how to swap two variables using pointers.

(d) Explain the process of dynamic memory allocation in C with examples of 'malloc' and 'free'.

(e) Discuss file handling in C. Write a program to read and write data to a file.