Algorithm Development and Programming Fundamentals
MCA SEM-1

Problem Solving - I

1. Prepare a flowchart to read the marks of a student and classify them into different grades. If the marks secured are greater than or equal to 90, the student is awarded Grade A; if they are greater than or equal to 80 but less than 90, Grade B is awarded; if they are greater than or equal to 65 but less than 80, Grade C is awarded; otherwise Grade D is awarded. Write a C program to demonstrate the function of this program.
2. Write a C Program to Find the Size of primitive data types. [Use sizeof operator]
3. Write a C Program to Demonstrate the specifiers/ modifiers in C. Print the size of applicable primitive data types with long and short specifiers.[Use sizeof operator]
4. Write a C Program to Multiply Two Floating-Point Numbers and show output with 4 digit precision.
5. Write a C Program to demonstrate the limits of data types using limits.h

Name	Meaning
CHAR_BIT	Bits in a char
CHAR_MAX	Maximum value of char
CHAR_MIN	Minimum value of char
INT_MAX	Maximum value of int
INT_MIN	Minimum value of int
LONG_MAX	Maximum value of long
LONG_MIN	Minimum value of long
SCHAR_MAX	Maximum value of signed char
SCHAR_MIN	Minimum value of signed char
SHRT_MAX	Maximum value of short
SHRT_MIN	Minimum value of short
UCHAR_MAX	Maximum value of unsigned char
UINT_MAX	Maximum value of unsigned int
ULONG_MAX	Maximum value of unsigned long
USHRT_MAX	Maximum value of unsigned short

6. Write a C program to swap two int numbers.
7. Write a C program to swap two int numbers without using any temporary variable.