DSA LAB SESSIONAL EXAM.
PROGRAM TEST

TOTAL: 30 Marks **TIME: 1 Hr.**

CS-36-GR1

Part-I: (5 marks writing + 10 marks execution):

Write a C program to do the following operation of polynomials using linked list:

a) Multiplication of two polynomials with different degrees (i.e., length of the polynomials are not same). Use the following case for an example:

Polynomial_1: $5x^4 + 3x^2 - 7x + 10 = 0$ Result: ?

Polynomial_2: $2x^3 - 4x^2 + 6x - 6 = 0$

Part-II: (5 marks writing + 10 marks execution):

Write a C program to implement a special STACK (S). If the size of the S is m, then m/2 can be accessed both from top and bottom (e.g., an integer division of m/2). It is like two stack is attached at the bottom and each has size m/2. A pointer Top_digit tracks the STACK top and bottom_alpha points to the bottom of the STACK. The permissible operations are:

1. First m/2, it only allows alphabets;
2. The remaining m/2, it only allows digits;
3. Once the Stack becomes FULL, it can operate from the both ends (including PUSH, POP and PEEK).