

**Total Marks:** 30

**Due Date and Time:** March 2, 2021 6 pm

**No late submission will be permitted.**

**Submission Procedure:** Upload the C program file by the due date and time. The file should be named as specified in the problem statement. Replace ROLLNO with your roll no (all small letters). **Do not upload exe files.**

**Problem 1.** Write a C program called ROLLNO\_cross\_product.c that takes as input the components of two three-dimensional vectors, computes the cross product of the two vectors, and prints the vectors (input and output) in a meaningful fashion. Arrays must be used to represent vectors. When you read input, compute the cross product, and print the results, array elements should be used (no temporary variables should be used in there).

Marks: 10

**Problem 2.** Write a C program called ROLLNO\_string\_concat.c that will take as input two strings and create a third string that is the concatenation of the characters in the two strings. When you take input if there is a newline character at the end, it should be removed. You can assume that the two string inputs will have a maximum of 20 characters each.

Example: If the two strings are str1 and str2 and the input are str1 = "Hello", str2 = " World!", then a third string str3 should be created that will be "Hello World!".

Restriction: Only stdio.h can be included in your code. You cannot include string.h.

Marks: 15

**Problem 3. Follow good programming practice** such as documenting with meaningful comments, using meaningful names for variables, and formatting the program. TAs will evaluate if you followed good programming practice in your codes submitted for this assignment and if you printed the results of the above programs in an understandable format.

Marks: 5