



Computer Engineering Department  
 (Discrete Mathematics)  
 10636215  
 HW2

**Deadline: 3/12/2022 midnight**

**10 points**

Write a C++ program to implement the following with the specified input and output:

**First:** make a menu list as you find suitable, two main options for the questions, and then make suboptions for each one to perform the requirements.

**Second:** you must add option to read from a file at the beginning rather than make the user to enter the values to save time. (the file format/order is up to you).

**Third:** submit compressed folder (the code, input file, and PDF for screenshots).

Q1. Given subsets A and B of a set with  $(n)$  elements maximum size of n is 32, use bit strings to find:

1.  $\overline{A \cup B}$
2.  $A \cap B$
3.  $A - B$
4.  $A \oplus B$

Q2. Given a finite set of alphabet character, list all elements of its power set, assume max size 4.

*Sample example for:*

*Q1: A{1,5,8,9,7,8} ; B {4,2,3} // convert index to bit string of max size index.*

*Q2: { S, K, J, W }*