بسم الله الرحمن الرحيم

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Computer Engineering Department
(Discrete Mathematics (10636215
HW1

Deadline: 12/04/2022 midnight	**20 points**

Write a C++ program to implement the following with the specified input and output:
First: make a menu list as you find suitable, three 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 a positive integer, find the **prime factorization** of this integer.

Q2. Implement The Chinese Remainder Theorem. Print the intermediate steps of the Theorem before printing the result of it.

Q3.Given relatively prime positive integers a and b, find **an inverse of a modulo b**. (Print the intermediate steps of the Extended Euclidean algorithm before printing the result).