EE 720: Introduction to Number Theory and Cryptography (Spring 2018)
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Assignment 2: 10 points | Date: January 23, 2018

Find the pdf file corresponding to your roll number in the directory `https://www.ee.iitb.ac.in/~sarva/courses/EE720/2018/assignments/assignment2/`. Upload the answers as a **pdf** file in Moodle. Use the tex file provided in the directory to fill in your answers. The **upload deadline** will be 11:00pm IST on Wednesday, January 31, 2018.

1. [5 points] Prove that the Vigenére cipher using period t is perfectly indistinguishable when used to encrypt messages of length t. Prove this directly without proving the perfect secrecy of the scheme and then using the equivalence of perfect secrecy and perfect indistinguishability.

   Solution: Write your answer here

2. [5 points] Let $\texttt{negl}_1$ and $\texttt{negl}_2$ be negligible functions. Prove that the function $\texttt{negl}_3$ defined by $\texttt{negl}_3(n) = \texttt{negl}_1(n) + \texttt{negl}_2(n)$ is negligible.

   Solution: Write your answer here