**CS 5197/6097 Wireless and Mobile Networking**

**Homework No. 10 dated Wednesday November 14, 2017**

**P16.2.** Given two prime numbers, p=23 and q=37, define the private and public keys by selecting appropriate values of the number “.”

**P16.12.** The function of an 8x8 permutator is given by the following table:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Input |  |  |  |  |  |  |  |  |
| Output |  |  |  |  |  |  |  |  |

The following message is to be sent through the air:

I AM DONE WITH MY FINALS AND NOW CAN TAKE A

BREAK OR A VACATION.

Find the message going through the air if

1. An 8-way interleaving is done before using the permutator.
2. An 8-way interleaving is done after using a permutator and before it is transmitted.

**P16.23.** In a large sensor network of 1024 nodes, 32 clusters are formed, with each cluster consisting of 32 nodes. Each CH employees 32x32 2-D matrix based secured symmetric keys to communicate with each member of the cluster; while 32x32 2-D matrix based bivariate polynomils to communicate among the CHs? Is this a feasible solution to provide increasing level of security based on criticality of data? Explain clearly.