# Network Security

Assignment 01                                                    Due Date: 26<sup>th</sup> March 2018

Notes:

- Submit the assignment in soft form only on Piazza.
- The assignment must be submitted no later than 6.pm
- Late assignments aren't going to be entertained

Q 01.   Explain how XTS and GCM mode of operations work. Write down their advantages and disadvantages.

Q 02.   What is a buffer overflow attack. What can an attacker get out of a buffer overflow/overrun attack. Write a C/C++/python/java/javascript program with the help of which you can demonstrate how a buffer overflow attack would take place. Your code must be properly formatted, well structured and must be commented. The better the code and demonstration, the higher the marks.

Q 03.   Setup a lab on your pc. You must have a windows/linux host system. A virtualbox/vmware software that could run a kali linux on your machine. Also a windows system (windows 7/8) must be used as a virtual machine. Overall this is how it should be: Windows/Linux host, 1 windows vm, 1 (kali) linux vm. You must have proper connectivity between the host and guest machines. i.e. all machines must be able to ping each other. At the end of the day, use nmap tool to scan one guest and one host machine from the kali linux machine. Make sure you do a deep scan of the systems. Provide the output of the scanned systems.