

CS 531 – Fall 2020

SECURITY IN CYBER-PHYSICAL SYSTEMS

Homework #2

Due: 10/18/2020 11:30PM

Notes: Please **cite** your sources to answer the following questions if you use any (most probably you will). You are welcome to use any figure/text that you find online with specifying source of it.

- 1) What is serial communication? What is parallel communication? Please **explain** and compare them by giving some advantages/disadvantages. (30p)

- 2) Is Ethernet based on serial or parallel communication? Please **explain** your answer. (10p)

- 3) Compare and contrast master/slave vs. client/server. Give at least one example of similarities and one example of differences. (20p)

- 4) Find a sample pcap file (packet capture file) of any of the protocols we talked about in the class (except Ethernet Powerlink). Open it with Wireshark and make sure to take screenshot with the date/time of PC in the picture to attach your response. Analyze the packets in that pcap file by explaining the meaning of each field of the packet.
Please make sure your capture is not consisted of only 1 packet so that you can take a look at multiple packets of the same protocol. (40p)