**CIS 1130 – Topic 1 Homework**

| **Your Name:** | Cameron Murphy |
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| **Date:** | 01-14-2014 |

**Instructions**: Answer the questions below in the space provided; be sure your answers are clearly written and grammatically correct with no spelling errors. Following these questions, paste the screen shots showing the requested element.

| **Chap 1 – Introduction to Networking** | | |
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| Question 1.1  2 Points | *Question: How does the concept of layers describe flow of information or communications?* | Your Answer:  Layers are a good way to abstract complex topics and create a point of reference so that different people can communicate effectively about topics like tcp. It also categorizes these topics though not always cleanly. |
| Question 1.2  2 Points | *Question: What is a mnemonic used for remembering the OSI model?* | Your Answer:  Please do not throw sausage pizza away. |

*Fill out the following table. (6 Points)*

1. *Under functions, please supply enough information to completely describe the function of each layer.*
2. *In the keywords column write a word or phrase to help you remember the purpose of the layer.*
3. *Under hardware, please list the network devices used at that layer.*
4. *For the protocols column, provide specific protocols that are used in the TCP/IP suite.*
5. *Note that layers 5-7 (Marked Red) do not have some of the categories such as PDU’s or hardware.*

6 Points

|  | OSI model |  |  | TCP/IP model |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Name | PDU | Function | Keywords | Hardware | Name | Protocols |
| 7 | Application |  | The layer that most people are familiar with and is most easily seen. This layer deals with actual applications and how they are used by people. It also deals with background processes that are handled by the operating system and are not necessarily visible to the user (processes and daemons). | GUI, API, processes |  | Application |  |
| 6 | Presentation |  | The in between for the application layer and everything below it. Data conversion happens at this level. | Encryption |  | Application |  |
| 5 | Session |  | Sessions deal with incoming and outgoing data, where they go in a pc and how they’re handled. Ports are either opened or closed and these handle different connections. Examples are the file transfer port (21) or the web page port (443). | Ports |  | Application |  |
| 4 | Transport | Packet | Packets are small pieces of information that apart of larger items. They are either segmented, or reassembled here. TCP allows machines to setup connections with each other using the 3 way handshake. Or the UDP is used to send information through connectionless communication if packet loss is not a worry. | TCP, UDP, segmentation |  | Transport | TCP, UDP, SMB |
| 3 | Network | Packet | Packets of data are included in frames. Larger networks can be broken up by using subnets. Routers use IP addresses instead of MAC addresses to send data to the appropriate networks. | Packet | Router | internet | TCP/IP, ICMP, |
| 2 | Data link | Frame | The MAC address that is unique to every NIC is used by switches to ensure that data is being sent to the correct machine within a local area network. Data is encapsulated in a frame that has addressing, data type and a checking system. | Mac Address | Network interface card, switch, FCS, CRC | Network access |  |
| 1 | Physical | Bits | The layer where actual bits are transferred through cables. The Network interface card gives machines the capability to access networks with the help of higher level technologies. | NIC | Network interface card, cabling | Network access |  |