MURIITHI WANJIRU BRIDGET

SCT 212-0466/2022

NETWORK SYSTEMS ADMINISTRATION

ASSIGNMENT 1

COMPUTER TECHNOLOGY

2.1

**Q) Using 300 words state the differences and similarities between the OSI (Open Systems Interconnection) and TCP (Transmission Control protocol)/IP (Internet Protocol) models.**

Starting with the differences:

1. **Number of layers:** the OSI model has 7 layers while the TCP/IP model has 4 layers.
2. **Development History**: The OSI model was developed by the international organization for standardization (ISO) while the TCP/IP model was developed by the U.S Department of Defense for use in ARPANET, the early form of internet.
3. **Layer Names and Functions:** In the OSI model, each layer has well-defined functions and specific names while in the TCP/IP model layer names are generalized and the functions within each layer may overlap making it more flexible.
4. **Delivery:** Delivery of data packets in the OSI model is guaranteed because an acknowledgement is sent between the receiver and sender after transmission while in the TCP/IP no such communication occurs thus delivery of the data packets is not guaranteed.
5. **Reliability:** The presence of many layers in the OSI model makes it a less reliable for transmission while the 4 layers in the TCP/IP model make it more reliable, simpler and more practical for real world implementation.

Onto the similarities:

1. **Layered Approach**: both models use a layered approach with protocols that govern communication between layers.
2. **Hierarchical Structure**: both models organize their respective layers in a hierarchical manner with each layer building upon the services provided by the layers below it.
3. **Encapsulation:** data in both models is encapsulated as it moves through layers. This means that as data passes the higher layers to lower layers, additional headers and control information are added to the original data.
4. **Similar Layers:** the network, application and network layers can be found in both models where they perform similar functions.
5. **Networking and Communication process**: both models define the standards of networking by simplifying and dividing the network communication process into various layers using protocols.