ASSIGNMENT 1

SCT212-0712/2022

NETWORK SYSTEM & ADMINISTRATION

Q1. In 300 words discuss the differences and similarities of the OSI & TCP model

**Differences**

1.Number of Layers**:** **OSI Model**: Consists of seven layers, including the Physical, Data Link, Network, Transport, Session, Presentation, and Application layers while the **TCP/IP** Model: Comprises four layers: Network Interface, Internet, Transport, and Application

2.Ease of Understanding: The OSI model is often considered more complex for educational purposes due to its detailed breakdown of functions into seven layer while the TCP/IP model is simpler to grasp because it directly corresponds to the structure of the modern internet

3. In the OSI model the data link and the physical layer are separate layers while in TCP model the data link and the physical are both combined to a single host to network layer

4.The OSI model refers to Open System Interconnection while the TCP model refers to Transmission Control Protocol

5.The OSI follows a vertical approach while the TCP model follows a horizontal approach

6.The OSI model was developed by the ISO (International Standard Organization) while the TCP model was developed by the ARPANET (Advanced Research Project Agency Network)

7.The OSI provides a clear distinction between interfaces, services and protocols while the TCP model does not have any clear distinguishing points between interfaces, services and services

8.Protocols are hidden in OSI model and are easily replaced as the technology changes while in TCP/IP replacing protocol is not easy

9.OSI model has a problem of fitting the protocols into the model while TCP/IP model does not fit any protocol

**Similarities**

1.Functionality-In both models a single layer defines a particular functionality and set of standards for that functionality only

2.Structre- Both models are arranged layered wise which is also called architectural model. These models have a stack of protocols each arranged in each layer, both have a set of protocols

3.Framework- In both models they provide a framework for creating and implementing networking standards and devices

4.Troubleshooting- Both models simplify troubleshooting by dividing complex functions into simpler components of the layer

5.Networking- Both models define standards for networking

6. In both models, data is divided into packets and each packet may take the individual route from the source to the destination.

7. OSI layer 3 maps directly to the Internet layer of the TCP/IP model. In both models this layer describes protocols that address and [route data packets](https://www.networkstraining.com/routing-vs-forwarding-vs-switching/) through diverse networks.

8.OSI layer 4 maps directly to the TCP/IP transport layer. In both models this layer provides a general description of services needed to assemble and reliably deliver data between two end-devices