**BIT 2204 NETWORK SYSTEMS AND ADMINISTTRATION ASSIGNMENT**

**Reg no:** SCT212-0112/2022

**Similarity and difference between OSI model and TCP/IP reference model**

**OSI Model:** (Open Systems Interconnection) is a framework that defines the functions of a computer system in seven distinct layers.

**TCP/IP Model:** (Transmission Control Protocol/ Internet Protocol) is a model based on a four-layer architecture that serves as the foundation for the internet’s design.

**Similarities**

* Both the OSI model and TCP/IP model have an application layer which is the top most.
* In both the OSI and TCP/IP model the application layer is responsible for high level application protocols. Example is SMTP used in emails.
* Both have Transport layer which enables end to end communication between devices.
* Both use TCP (Transmission Control Protocol) protocol in transport layer which offers error detection and correction where incase the data is not delivered it can be retransmitted making it reliable.
* Both have Network layer which handles packet routing and addressing. In routing the network layer determines the optimal path for transmission of packets while in addressing it assigns logical addresses to devices on the network.

**Differences**

* The OSI model is made up of 7 layers namely; Application layer, Presentation layer, Session layer, Transport layer, Network layer, Data link layer and Physical layer while TCP/IP layer is made up of 4 layers namely; Application layer, Transport layer, Network layer and Network access layer.
* In TCP/IP the network layer provides connectionless services and the transport layer provides connection-oriented service while in the OSI model the transport layer provides both connection-oriented and connectionless services.
* The OSI model has distinct session and presentation layer while in the TCP/IP model both session and presentation layer are handled in the application layer.
* OSI refers to Open Systems Interconnection while TCP/IP refers to Transmission Control Protocol/ Internet Protocol.
* In the OSI model the transport layer provides assurance that all packets are delivered using the Transmission Control Protocol while in the TCP/IP the transport layer does not provide assurance in the delivery of packets since it can use the User Datagram Protocol.