**REG NO: SCT212-0722/2022**

**NSA ASSG1**

**Differences between TCP and OSI model**

**1. OSI model has 7 layers which are:**

- **Physical Layer**: Concerned with the physical medium, such as cables and signals.
- **Data Link Layer**: Manages data framing and ensures reliable data transfer across the physical medium.
- **Network Layer**: Focuses on routing, addressing, and logical connections.
- **Transport Layer**: Provides end-to-end data transfer with flow control and error correction.
- **Session Layer**: Manages session establishment, maintenance, and termination.
- **Presentation Layer**: Handles data translation, encryption, and compression.
- **Application Layer**: Represents the user interface and application-specific functionality.

**While the TCP model has 4 layers which include**:

- **Physical Layer**

  It is a group of applications requiring network communications. This layer is responsible for generating the data and requesting connections. It acts on behalf of the sender and the Network Access layer on the behalf of the receiver.

- **Data Link Layer**

The packet's network protocol type, in this case, TCP/IP, is identified by the data-link layer. Error prevention and "framing" are also provided by the data-link layer.

- **Internet Layer**

This layer parallels the functions of OSI's Network layer. It defines the protocols which are responsible for the logical transmission of data over the entire network.

- **Transport Layer**

The TCP/IP transport layer protocols exchange data receipt acknowledgments and retransmit missing packets to ensure that packets arrive in order and without error.

**2.** The OSI model is low in usage unlike the TCP which is highly used

3. The OSI is vertically approached while TCP is horizontally approached

4. Delivery of the package is guaranteed in the OSI model unlike in TCP where delivery is not guaranteed

5. OSI model is less reliable than TCP model while TCP is highly reliable

6. On the OSI model, replacement of tools and changes can be easily be done while in the TCP model it is more complex