**BCT 2204**

**NETWORK SYSTEMS AND ADMINISTRATION**

**SCT212-0705/2022**

**PRECIOUS NDULU**

**QUESTION: In 300 words, write a write-up on the difference between the 7-layer OSI reference model and the TCP/IP model.**

**The Open Systems Interconnection (OSI) model** is a conceptual framework that has seven layers which computer systems use to communicate over a network.

**TCP/IP** stands for Transmission Control Protocol/Internet Protocol and makes it possible for devices connected to the internet to communicate with one another across networks.

**Difference between the 7-layer OSI reference model and the TCP/IP model**

**OSI reference model**

The seven layers of the OSI reference model are:

* **Application Layer**: This is where user applications like web browsers and email clients communicate with the network.
* **Presentation Layer:** It deals with data formatting and translation, making sure information can be understood by different systems.
* **Session Layer**: Responsible for creating, managing, and terminating communication sessions between devices.
* **Transport Layer**: Ensures data is sent reliably from the source to the destination and performs error correction when needed.
* **Network Layer**: Manages the routing of data packets between different networks and handles logical addressing.
* **Data Link Layer**: Focuses on framing data into packets, detecting and correcting errors, and controlling media access.
* **Physical Layer**: This is where the actual hardware comes into play, handling the raw transmission of data over physical mediums like cables or wireless signals.

**TCP/IP model**

The four layers of the TCP/IP model are:

* **Link layer**: is responsible for transmitting packets over the physical medium and for detecting and correcting errors in the transmission of packets.
* **Internet layer**: is used for routing packets between different networks.
* **Transport layer**: is used for providing reliable end-to-end communication between devices.
* **Application layer**: is the layer that is closest to the user and is responsible for providing network services to applications, such as web browsing and file transfer.

- In the TCP/IP model, the OSI Presentation and Session layers are combined in the Application layer.

- Unlike the OSI model, the TCP/IP model doesn't have a separate physical layer, as it is built into the hardware.

- The OSI model is used for certifications, while the TCP/IP model is used for making the internet work.

- The OSI model has seven layers, making it more complex, while the TCP/IP model has just four making it simple.

- OSI Model Is not widely implemented in practice while TCP/IP Model is used for most modern networking protocols and widely implemented.

- OSI Model is Less compatible with protocols while TCP/IP Model is highly compatible with real-world internet technologies