**NETWORK SYSTEMS AND ADMINISTRATION**

**REG NO: SCT212-0166/2022**

**GRACE FAVOUR MWANGI**

**ASSIGNMENT 1**

The 7 layer OSI reference model and the TCP/IP model are both frameworks used to understand and describe how computer networks function. While both models serve as guidelines for understanding how data is transmitted across networks, they differ in terms of structure and application.

The OSI model is a theoretical framework consisting of seven layers: Physical, Data Link, Network, Transport, Session, Presentation, and Application. Each layer has a specific function, and the model is intended to be a comprehensive and generic representation of network communication. It provides a structured way to understand the complexities of networking, making it easier to design, implement, and troubleshoot networks. Each layer interacts with the layers above and below it.

In contrast, the TCP/IP model , which stands for Transmission Control Protocol/Internet protocol, more of a practical and widely adopted approach to networking. It comprises four layers: Network Interface, Internet, Transport, and Application. The Network Interface layer combines elements of the OSI model's Physical and Data Link layers. The Internet layer corresponds to the OSI Network layer. The Transport layer mirrors the OSI Transport layer, and the Application layer includes aspects of the Session, Presentation, and Application layers of the OSI model. The TCP/IP model is widely used in modern networks, especially on the internet.

In terms of layer functionality, the OSI model includes layers such as the Presentation layer, which deals with data formatting and encryption, and the Session layer, which manages communication sessions between devices. These layers are not explicitly defined in the TCP/IP model.

Overall, the OSI model is a comprehensive and theoretical framework that provides a conceptual understanding of network communication, while the TCP/IP model is a practical implementation used in real-world networks. Both models have their advantages and are useful in different contexts. It's important to understand both models to gain a comprehensive understanding of network communication and infrastructure.