**BIT 2204: Network Systems and Administration**

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**Assignment**

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

The OSI reference model and the TCP/IP model are foundational frameworks employed to conceptualize and grasp the architecture of computer networks. Although both function as reference models they diverge in their methodologies and layer configurations.

The Open Systems Interconnection model has seven layers. The Physical layer, Data link layer, Network layer, Transport layer, Session layer, Presentation and Application layer. Each layer performs its tasks independently. It was developed in 1984 by the International Organization for Standardization. The OSI model is often considered a theoretical framework and is not directly implemented in networking protocols. It provides a comprehensive and structured view of networking, making it easier to understand network communication processes in a hierarchical manner.

In contrast, the TCP/IP model, which is also referred to as the Internet Protocol suite consists of four layers: Physical layer, Network layer, Transport layer and Application layer. It can be used as a communication protocol in a private computer network. The TCP/IP model is the basis for the actual protocols used on the internet. The layers of the TCP/IP models are less granular and more closely aligned with real world networking protocols. For Instance, the Internet layer in the TCP/IP model combines aspects of the OSI Network and Data Link Layers.

The key distinction between these models revolves around their applicability and real-world use. While the OSI model offers a thorough theoretical structure, the TCP/IP model excels in practicality, finding direct application in real world networking situations. This practicality has led TCP/IP to become the prevailing standard for internet communication in contemporary times. However, the OSI model is better in delivery of packages and replacement of tools compared to the TCP/IP model.