**In 300 words, write a write-up on the difference between the 7 layers OSI reference model and the TCP\IP MODEL?**

**What is OSI Model?**

The OSI Model is a logical and conceptual model that defines network communication used by systems open to interconnection and communication with other systems. The Open System Interconnection (OSI Model) also defines a logical network and effectively describes computer packet transfer by using various layers of protocols.

**What is TCP/IP Model?**

TCP/IP helps you to determine how a specific computer should be connected to the internet and how you can transmit data between them. It helps you to create a virtual network when multiple computer networks are connected together.

TCP/IP stands for Transmission Control Protocol/ Internet Protocol. It is specifically designed as a model to offer highly reliable and end-to-end byte stream over an unreliable internetwork.

**Key Difference Between TCP/IP and OSI Model**

* OSI has 7 layers, whereas TCP/IP has 4 layers.
* The OSI Model is a logical and conceptual model that defines network communication used by systems open to interconnection and communication with other systems. On the other hand, TCP/IP helps you to determine how a specific computer should be connected to the internet and how you can be transmitted between them.
* OSI header is 5 bytes, whereas TCP/IP header size is 20 bytes.
* OSI refers to Open Systems Interconnection, whereas TCP/IP refers to Transmission Control Protocol.
* OSI follows a vertical approach, whereas TCP/IP follows a horizontal approach.
* OSI model, the transport layer, is only connection-oriented, whereas the TCP/IP model is both connection-oriented and connectionless.
* OSI model is developed by ISO (International Standard Organization), whereas TCP Model is developed by ARPANET (Advanced Research Project Agency Network).
* OSI model helps you to standardize router, switch, motherboard, and other hardware, whereas TCP/IP helps you to establish a connection between different types of computers.

**Similarities between the TCP/IP model and the OSI model**

* Both are logical models.
* Both define standards for networking.
* Both provide a framework for creating and implementing networking standards and devices.
* Both divide the network communication process into layers.
* In both models, a single layer defines a particular functionality and sets standards for that functionality only.
* Both models allow a manufacturer to make devices and network components that can coexist and work with the devices and components made by other manufacturers.
* Both models simplify the troubleshooting process by dividing complex functions into simpler components.
* Instead of defining the already defined standards and protocols, both models referenced them. For example, the Ethernet standards were already defined by IEEE before the creation of these models. So instead of defining them again both models used them as IEEE Ethernet standards.