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**UNIT NAME: NETWORK ADMINISTRATION SYSTEMS**

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**ASSIGNMENT ONE.**

The open systems interconnection (OSI) reference model and the transmission control protocol/ internet protocol(TCP/IP) are two conceptual frameworks used to understand and describe how network protocols and communication work. While they serve similar purposes, they have differences in terms of the number of layers, the specific protocols they references, and their level of adoption. Here are the key differences and similarities between the OSI reference model and the TCP/IP model:

**Similarities;**

* With respect to **structure**, both are arranged layered wise which is also called an architectural model. These models have a stack of protocols it means the protocol is arranged in every layer. Both models have some set of protocols.
* With respect to **networking,** both models define standards for networking.
* With respect to **framework,** both provide a framework for creating and implementing networking standards and devices.
* With respect to **communication process**, both simplify and divide the network communication process into making their layers.
* With respect to **similar components**, the manufacturer allows making sets of devices and network components that can co-exist and work with the devices and components that are made by other manufacturers.
* With respect to **troubleshooting**, both simplify their troubleshooting process by dividing the layer’s complex functions into simpler components of the layer.
* With respect to **ethernet standards**, instead of defining the already defined standards and protocols, both models referenced them.
* Both are logical models.

**Differences;**

* With respect to **origin,** the OSI model was developed by the International organization for standardization in the late 1970’s while the TCP/IP is based on protocols that were developed for the ARPANET, the precursor to the modern internet.
* With respect to **layering,** the OSI model has 7 layers, while the TCP/IP model has 4 layers.
* The OSI model has a vertical approach while the TCP/IP has a vertical approach.
* The OSI header has 5 bytes while the TCP/IP header has 20 bytes.
* The OSI model helps you standardize router, switch, motherboard and other hardware whereas TCP/IP helps you establish a connection between different types of computers.
* The OSI model is a logical and conceptual model that defines network communication used by systems open to interconnection and communication with other systems while TCP/IP helps you determine how a specific computer should be connected to the internet and how transmission between them would work.
* The protocols in OSI are better unseen and can be returned with another appropriate protocol quickly while the TCP/IP protocols are not hidden and we cannot fit a new protocol stack in it.
* In OSI protocols are unknown and are returned while the technology modifies while in TCP/IP, returning protocol is not difficult.
* With repect to **delivery of packages**, in OSI delivery is guaranteed while in TCP/IP delivery is not guaranteed.
* OSI is less used while TCP/IP is used majorly.
* TCP is more reliable than OSI.
* OSI is difficult while TCP/IP is simpler.