**DIFFERENCES OF OSI REFERENCE MODEL AND TCP/IP MODEL**

The OSI (Open Systems Interconnection) model and the TCP/IP (Transmission Control Protocol/Internet Protocol) suite are both models used to implement network protocols: They have similar operation but have differences such as:

1)The number of layers:

OSI model layers has seven layers which in including the following:

1. Application layer: This layer provides services to applications, such as file transfer and email.
2. Presentation layer: This layer formats data for transmission and ensures that it is compatible with the receiving system.
3. Session layer: This layer establishes, manages, and terminates sessions between communicating systems.
4. Transport layer: This layer provides reliable end-to-end communication.
5. Network layer: This layer routes data packets between networks.
6. Data link layer: This layer provides reliable transmission of data frames over a single physical link.
7. Physical layer: This layer transmits and receives raw bits over a physical medium, such as a copper wire or fiber optic cable.

While the TCP/IP model has 4 layers which are:

1.Application layer: This layer provides services for applications, such as file transfer and email.

2.Transport layer: This layer provides reliable end-to-end communication.

3. Internet layer: This layer routes data packets between networks.

4.Link layer: This layer provides reliable transmission of data frames over a single physical link.

2.) Layer functions

The OSI model being a reference model has all the layers have specific functions from the physical layer for transmission to application layer for display of end user applications; while the TCP/IP being a protocol model as it specifies how the protocols with less strict boundaries between them hence overlapping occurs, making it adaptable to various networking technologies.

3.) Practical application

The OSI model is a theoretical model, and it was developed for standardization of network layers, and it was intended to be a general-purpose model that could be used for any type of network;

while the TCP/IP model is a more practical model it was specifically for interconnected networks which brought the internet using protocols such as widely adopted, with protocols like HTTP, FTP, and SMTP fitting seamlessly into its layers

4.) Flexibility

The OSI model defines seven strict layers with clear boundaries, each handling a specific aspect of networking. These strict layered compartments make it more rigid and less adaptable to changing real-world needs;

While TCP/IP is designed with flexibility and interconnectivity in mind from the start. Its four layers are more general, abstract and have loose boundaries between them.

5.) Protocols definition and implementation

The OSI model works with different protocols such as HTTP, SMTP, Telnet, SSH for the standard for the application layer but it does not define the network core functionality while the TCP/IP model works also with these protocols: HTTP, SMTP, Telnet, SSH and definition and of the core networking protocols such as TCP, UDP, IP