Feature of OSI Model :

Big picture of network is understandable through this OSI model.

We see how hardware and software work together.

We can understand new technologies as they are developed.

Troubleshooting is easier by separate networks.

Can be used to compare basic functional relationships on different networks.

Functions of Different Layers :

Layer 1: The Physical Layer :

It activates, maintain and deactivate the physical connection. Voltages and data rates needed for transmission is defined in the physical layer. It converts the digital bits into electrical signal.

Layer 2: Data Link Layer :

Data link layer synchronizes the information which is to be transmitted over the data. Error controlling is easily done. The encoded data are then passed to physical. Error detection bits are used by the data link on layer. It also corrects the errors. Outgoing messages are assembled into frames. Then the system waits for the acknowledgements to be received after the transmission. It is reliable to send message.

Layer 3: The Network Layer :

It routes the signal through different channels to the other end. It acts as a network controller. It decides by which route data should take. It divides the outgoing messages into packets and to assemble incoming packets into messages for higher levels.

Layer 4: Transport Layer :

It decides if data transmission should be on parallel path or single path. Functions such as multiplexing, segmenting or splitting on the data done by layer four that is transport layer. Transport layer breaks the message (data) into small units so that they are handled more efficiently by the network layer.

Layer 5: The Session Layer :

Session layer manages and synchronize the conversation between two different applications. Transfer of data from one destination to another session layer streams of data are marked and are resynchronized properly, so that the ends of the messages are not cut prematurely and data loss is avoided.

Layer 6: The presentation Layer :

Presentation layer takes care that the data is sent in such a way that the receiver will understand the information (data) and will be able to use the data. Languages (syntax) can be different of the two communicating systems. Under this condition presentation layer plays a role translator.

Layer 7: Application Layer :

It is the top layer. Manipulation of data (information) in various ways is done in this layer. Transferring of files disturbing the results to the user is also done in this layer. Mail services, directory services, network resource etc are services provided by application layer.

Merits of OSI reference model:

OSI model distinguish between the services, interfaces and protocols.

Protocols of OSI model are very well hidden.

They can be replaced by new protocols as technology changes.

Supports connection oriented as well as connectionless service.

Demerits of OSI reference model:

Model was devised before the invention of protocols.

Fitting of protocols is tedious task.