Q What is open systems interconnections (OSI) and describe its layer.

Open system interconnections:

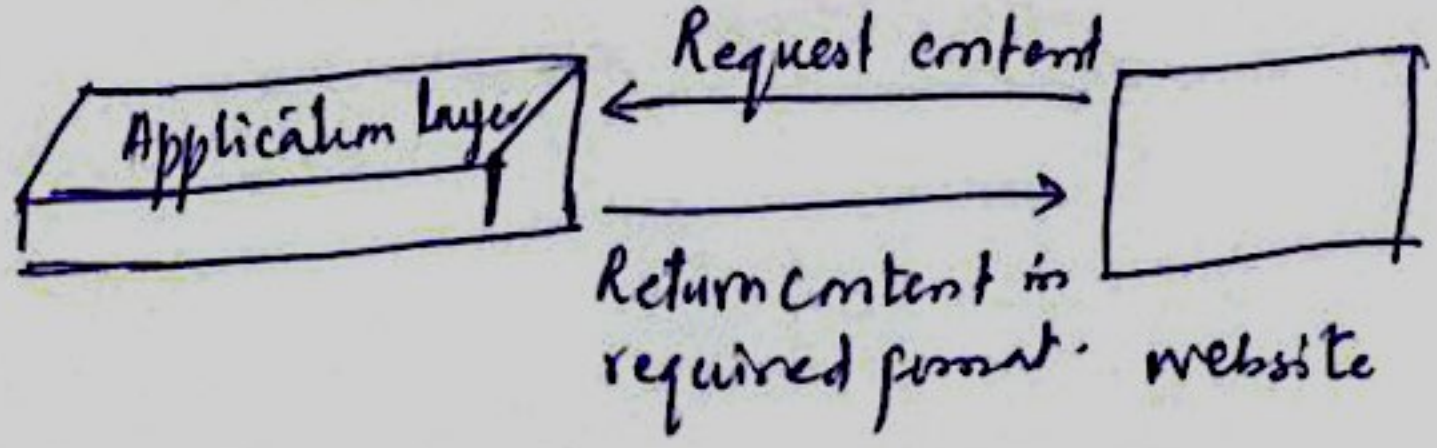
The open systems interconnections (OSI) model is a conceptual model created by the international organization for ~~Sods~~ Standardization which enables diverse communication systems to communicate using standard protocols. In simple terms, the OSI provides a standard for different computer systems to be able to communicate each other.

The OSI model can be seen as a universal language for computer networking. It is based on the concept of splitting up a communication system into seven abstract layers, each one stacked upon the last.

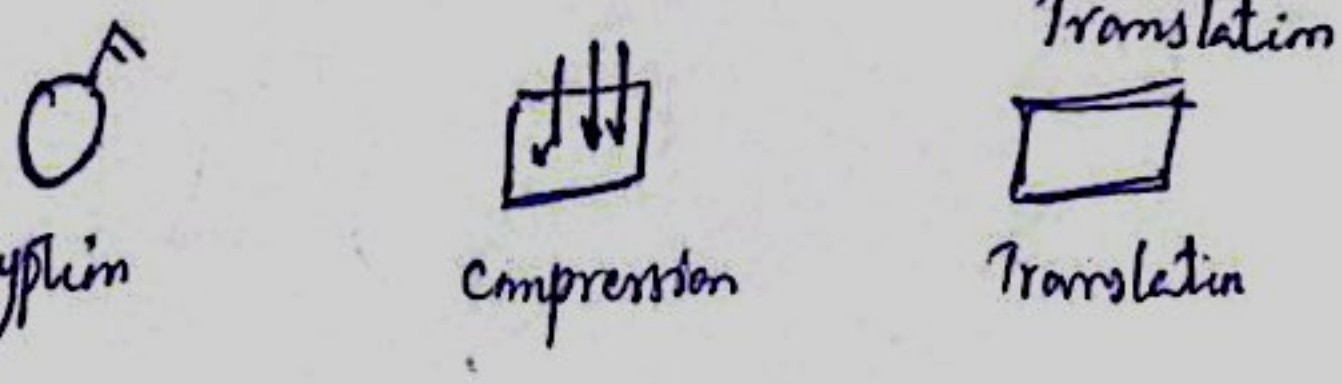
The Seven Layers of the OSI model can be defined as follows from Top to bottom:

⑦ THE APPLICATION LAYER:

The only layer that directly interacts with data from the user. Software applications like web browsers and email client rely on the application layer to initiate communications. But it should be clear that client software applications are not part of the application layer: rather application layer is responsible for the protocols and data manipulation. Application protocols **HTTP** as well as **SMTP** (Simple mail transfer protocol) enables emails communication.



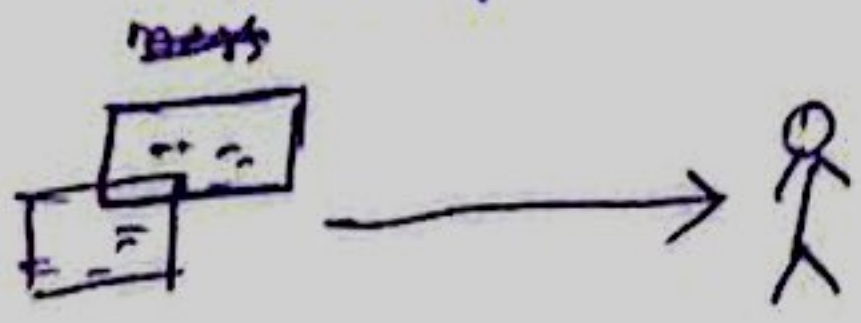
⑥ THE PRESENTATION LAYER:



It ensures that data is in a usable format and is where data encryption occur. This layer is responsible for **translation, encryption, and compression of data.**

(5) The Session layer:

This layer maintains connections and is responsible for controlling **ports** and **Sessions.**



(4) The Transport layer :

This layer is responsible for end to end Communication between the two devices. for transmits data using transmision protocals including **TCP** and **UDP.**

(3) Network layer:

This layer is responsible for facilitating data transfer between different network. It Decides which physical path the data will take.

Network layer protocols: include **IP**, the internet Control Message protocol **(ICMP)**, the internet group message protocol **(IGMP)**, and the IPsec.

(2) The Data link layer.

This layer takes packets from network layer and break them into smaller pieces called frames. It define ~~data~~ fomats of data on the network. It is also responsible for **flow-control** and **error-control** in the intra-network Communication.

(1) Physical layer:

This layer includes the physical equipment involvement in the data transfer, such as **Cables and Switches.** It also transmits raw bits over the physical medium.