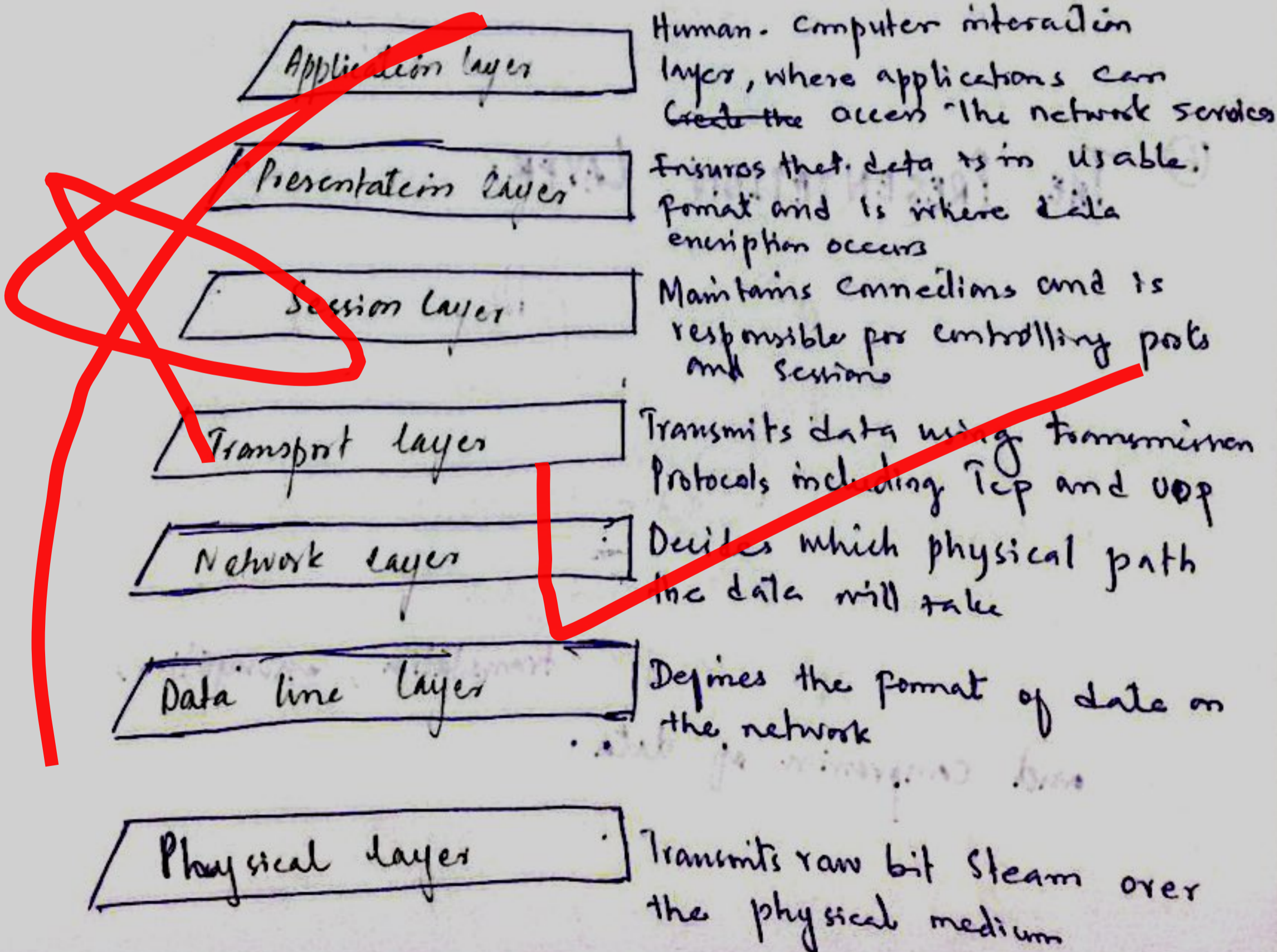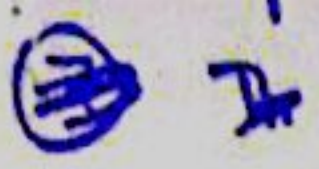**Q** What is open system interconnections (OSI) and discribe its layer.

## Open system interconnections:

The open systems interconnections (OSI) model is a conceptual model created by the international organization for 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.
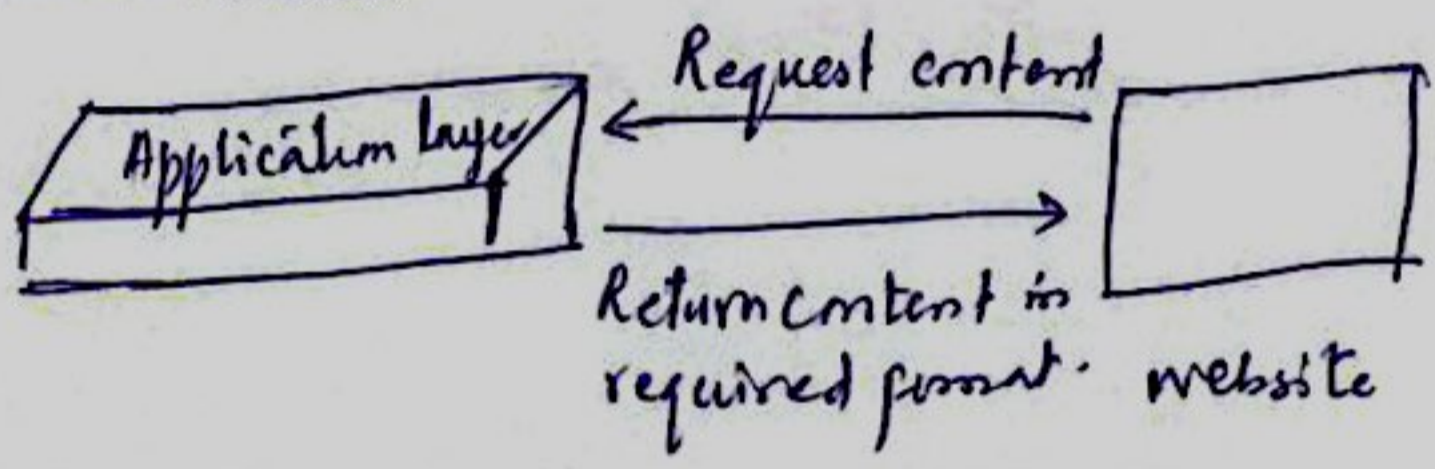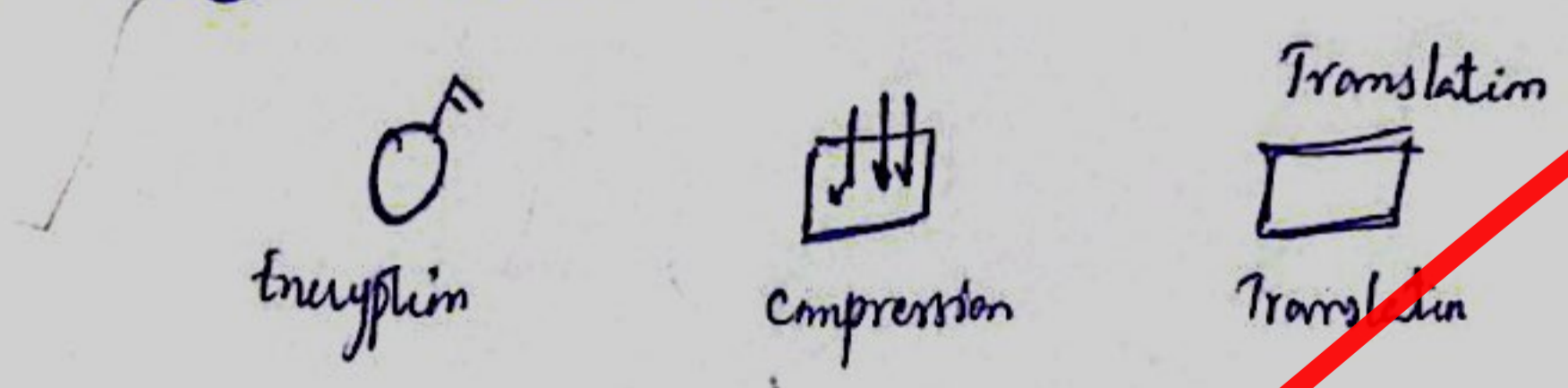
| Layer | Description |
|---|---|
| Application layer | Human-computer interaction layer, where applications can create the access the network services |
| Presentation layer | Ensures that data is in usable format and is where data encription occurs |
| Session Layer | Maintains connections and is responsible for controlling ports and sessions |
| Transport layer | Transmits data using transmission protocols including Tcp and UDP |
| Network layer | Decides which physical path the data will take |
| Data line layer | Defines the format of data on the network |
| Physical layer | Transmits raw bit steam over the physical medium |

Seven layers of the OSI model can be defined as follows from Top to bottom.

## ⑦ THE APPLICATION LAYER:

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

Request content

Application layer ← Request content

→ Return content in required format.   website

## ⑥ THE PRESENTATION LAYER:

Encryption    Compression    Translation
                             Translation

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.**
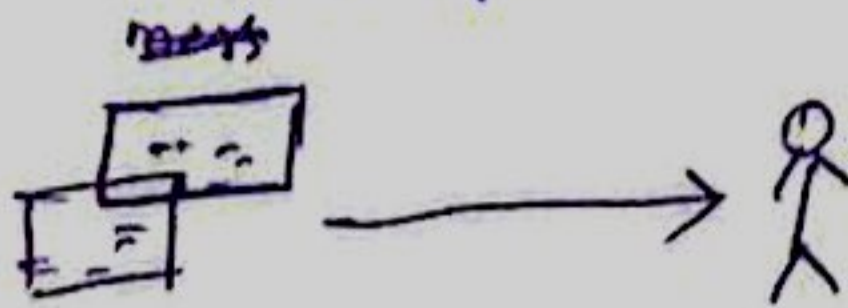


④ The Transport layer:

This layer is responsible for end to end communication between the two devices. for transmits data using transmission 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.

② 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 over the physical medium.

Good
Attempt more questions