

Q. Write short notes on the following:-

a) PPP (Point to Point Protocol)

One of the most common protocols for point-to-point access is the point-to-point protocol (PPP). Most of the people, who need to connect their home computers to the server of an Internet service provider use PPP. The most of these users have a traditional modem; they are connected to the Internet through a telephone line, which provides the services of physical layer. But to control and manage the transfer of data, there is a need for point-to-point protocol at the data link layer. PPP provides several services:-

1. PPP defines the format of the frame to be exchanged between devices.
2. PPP defines how two devices can negotiate the establishment of the link and exchange of data.
3. PPP defines how network layer data are encapsulated in the data link frame.
4. PPP defines how two devices can authenticate each other.
5. PPP provides network address configuration. This is particularly useful when a home user needs a temporary network address to connect to the Internet.

b) HDLC

HDLC is a bit-oriented protocol for communication over point-to-point and multipoint links. HDLC provides two common transfer modes that can be used in different



configurations :-

1. Normal response mode (NRM)

- In NRM, the station configuration is unbalanced.
- We have one primary station and multiple secondary stations.
- A primary station can send commands; a secondary station can only respond.

2. Asynchronous balanced mode (ABM)

- In ABM, the configuration is balanced.
- The link is point-to-point and each station can function as a primary and a secondary (acting as peers).
- It is a common mode.