Identify fundamental differences between circuit switched and packet-switched networks

In circuit-switched networks, the resources needed along a path to provide for communication between end systems are reserved for the duration of the communication session between the end systems. In packet-switched networks, these resources are not reserved.

No sharing of resources

It has a guaranteed performance

It requires setup period

**Advantages of packet switch as compare to circuit switching**

Packet switched networks can handle more user than circuit switched networks if the users are not continuously transmitting

Packet switching is simpler, not call setup.

Sharing resources/no resources are wasted

Packet switching offers better sharing of transmission capacity than circuit switching. It is simpler, more efficient, and less costly to implement than circuit switching.

**Advantages of circuit switching:**

Guaranteed performance

No congestion

**Frequency Division/Time Division**

Primary reason messages are segmented in a packet switched network

**Packet switches uses store-and-forward transmission, and break messages into segments** makes the transmission faster.

**What is asymmetric in an ADSL?**

ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part to receive information from the user.

Guided/Unguided media

Guided media, the waves are guided along a solid medium, such as fiber-optic cable, a twisted-pair copper wire, or a coaxial cable. With unguided media, the waves propane in the atmosphere and in outer space, such as in a wireless LAN or a digital satellite channel.

**When queuing occurs**

Packets queue at a node when arrival rate exceeds output capacity