1. **(16)** Write one advantage and one disadvantage of a communications subnet with star topology.

Advantage: The star topology is simple and it is using frequently and no data collisions can occur.

Disadvantage: When central node fails in star topology, all network will be fail and also central node can be bottleneck because every nodes are connected to middle node.

1. **(16)** What are **the two most important functions** of Internet (Network, Host-to-Host) Layer in TCP/IP Reference Model? Just name them.

Function 1-> Packet routing

Function 2-> Congestion control

1. **(18)** Given a communications channel between A and B with a data rate (that is, channel capacity) 256Kbps and 20 milliseconds propogation delay, compute the total transmission time from A to B, of a 128 Kbits long (that is 16000bytes) message if the channel is **simplex**.

1.280.000 bytes per second

16000 128