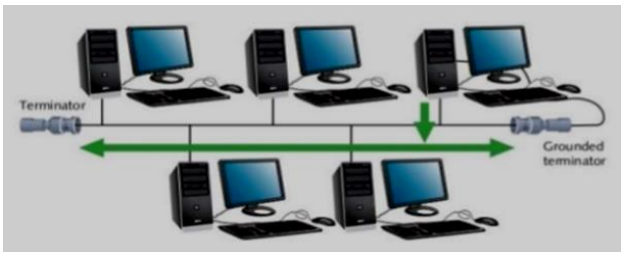
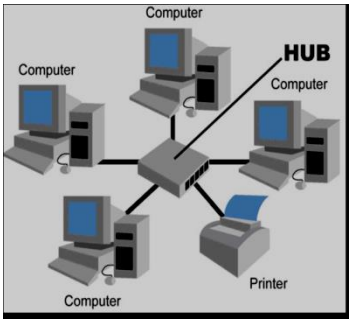
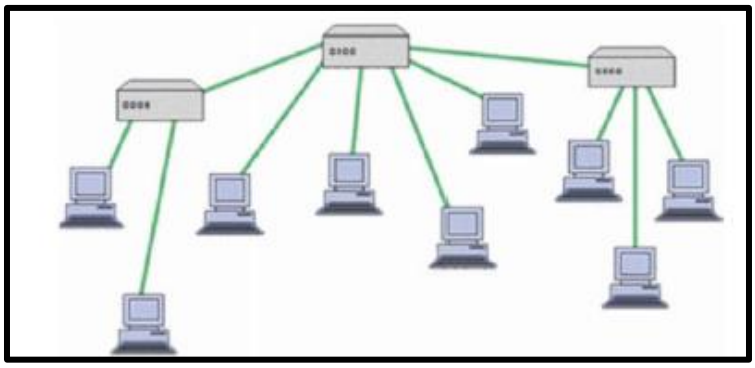
MSD Sanjeevani Public School, Mohan Garden
Subject- Computer Science (with Python)
Class-12th (Non-Med)
Assignment-12 (from ch-10 Computer Network)

Q1	**Compare bridge, router and gateway in computer networking**
Ans	A **bridge** is a device that basically connects two LANs working on same network protocols. It also works as a repeater, i.e., amplifies the signal when it becomes weak. **Router**, is a device that helps in decision making for data routes. It works in network layer. It has a dynamically updating routing table according to which it routes the data. It can work on LANs and WANs. It routes the data based on IP addresses. A **gateway**, as the name suggests is a passage to connect two different networks together. These network may work on different protocols or networking models. Also known as protocol converter. They take data from one system, interpret it and transfer it to another system.
Q2	**Explain wifi card.**
Ans	Wi-Fi cards are small and portable cards that allow your desktop or laptop computer to connect to the internet through a wireless network. Wi-Fi transmission is through the use of radio waves. The antenna transmits the radio signals and these signals are picked up by Wi-Fi receivers such as computers and cell phones equipped with Wi-Fi cards. Wi-Fi card acts as both a receiver and transmitter. These devices have to be within the range of a Wi-Fi network to receive the signals. The Wi-Fi card then reads the signals and produces a wireless internet connection. Wi-Fi cards can be external or internal. Many new computers, mobile devices etc. are equipped with wireless networking capability and do not require a Wi-Fi card.
Q3	**What do you mean by network topology?**
Ans	Topology is the pattern of interconnection of nodes in a network. The different types of topologies are : bus topology, star topology, tree topology etc
Q4	**Explain Bus topology?**
Ans	Bus topology is also known as Linear Topology. In this type of topology, each node attaches directly to a common cable, functions as a shared communication medium onto which various nodes are attached. Data is transmitted in small blocks called packets. Each packet has a header 

	containing the destination address. When data is transmitted on the cable, the destination node identifies the address on the packet and thereby processes the data.
Q5	**Explain Star topology?.**
	 A star network features a central connection point called a "hub node" to which all other nodes are connected by a single path. Each node has a dedicated set of wires connecting it to a central network hub. Since all traffic passes through the hub, the hub becomes a central point. Compared to the bus topology, a star network generally requires more cable, but a failure in any star network cable will only take down one computer's network access and not the entire LAN. On the other hand if the hub fails, the entire network also fails.
Q6	**Explain tree topology.**
Ans	 Tree topology is a combination of bus and star topology. The network looks like an inverted tree with the central root branching and sub-branching down to the nodes. It integrates multiple star topologies together onto a bus. In its simplest form, only hub devices connect directly to the tree bus. This bus/star hybrid approach supports expandability of the network much better than a bus (limited in the number of devices due to the broadcast traffic it generates) or a star (limited by the number of hub connection points) alone. Data transmission takes place in the same way as in bus topology.