Data communication:

1. **Difference types of networks –**
   a. LAN (local area network) – Range – One building / Office
   b. PAN (Personal area network) – Range – 10 Meter
   c. MAN (metropolitan area network) – Range – within city
   d. WAN (Wide area network) – Range - Country

2. **Difference between Shielded twisted pair and unshielded twisted pair -**
   Shielded twisted pair cable (STP) has the individual pairs of wires wrapped in foil, which are then wrapped again for double protection. Unshielded twisted pair cable (UTP) has each pair of wires twisted together. Those wires are then wrapped in tubing without any other protection. UTP cables are less expensive, and a more popular type of cabling.

3. **Difference between baseband and broadband transmission –**
   The prior difference between baseband transmission and broadband transmission is that in the baseband transmission the whole bandwidth of the cable is utilized by a single signal. Conversely, in the broadband transmission, multiple signals are sent on multiple frequencies simultaneously using a single channel.

4. **Difference between HUB, Modem, Router and Switch**
   A switch transmits data from one device to another in form of frames while a router transmits data from one network to another in form of packets. A hub transmits data from one device to another in form of binary bits. Modem connects two or more computers together by means of a telephone line so that information can go from one to the other.

5. **Yes, that's because MAC addresses are hard-wired into the NIC circuitry, not the PC.** This also means that a PC can have a different MAC address when the NIC card was replace by another one.

6. Most common hardware related problems are PaBX, LAN Card, WLAN Card and Wi-Fi AP if it is wireless, Cables, Switches, Routers and Wireless Controllers.

7. The best solution is to install anti-virus on all the computers in the network.

8. **Static IP and Dynamic IP –**
   When a device is assigned a static IP address, the address does not change. Most devices use dynamic IP addresses, which are assigned by the network when they connect and change over time.

   IPV4 and IPV 6 –
   The main difference between IPv4 and IPv6 is the address size of IP addresses. The IPv4 is a 32-bit address, whereas IPv6 is a 128-bit hexadecimal address.

9. TCP/IP stands for Transmission Control Protocol/Internet Protocol and is a suite of communication protocols used to interconnect network devices on the internet. TCP/IP is also used as a communications protocol in a private computer network. TCP/IP specifies how data is exchanged over the internet by providing end-to-end communications that identify how it should be broken into packets, addressed, transmitted, routed and received at the destination.

10. Web Browser –

The web browser is application software to explore www (World Wide Web). It provides an interface between the server and the client. Chrome, Mozilla, Edge, Safari is commonly used web browser.

11. Search Engine –

A search engine is a software program that helps people find the information they are looking for online using keywords or phrases. Google, Yahoo, Rediff and Bing are the most popular search engine.

12. Internet and WWW –

The internet is a public network of network with a maze of wired and wireless connections between separate groups of servers computers and countless devices from around the world. The World Wide Web is distinguished from other systems through its use of HTTP (Hypertext Transfer Protocol). Emails, video conferencing, social networking and chatting are some prime examples.

13. Internet service provider –

ISP provides us internet connections and services. BSNL, Airtel, Vodafone and Reliance are major ISP in India.

14. Difference between MAC address, IP address and Port address -

MAC Address and IP Address are used to uniquely define a device on the internet. NIC Card's Manufacturer provides the MAC Address, on the other hand, Internet Service Provider provides IP Address. The main difference between MAC and IP address is that MAC Address is used to ensure the physical address of the computer. It uniquely identifies the devices on a network. While IP addresses are used to uniquely identify the connection of the network with that device takes part in a network. A Port address is a logical address which is assigned to each application on the computer that utilizes the internet for communication.

15. **View internet browser's history -**

Click on settings and then click on history or press Ctrl + H together.