**1. Network protocol?**

A network protocol is an established set of rules that determine how data is transmitted between different devices in the same network.

**2.Data communications**

Data communications (DC) is the process of using computing and communication technologies to transfer data from one place to another place.

**3. What is a network topology?**

A network topology is the physical and logical arrangement of nodes and connections in a network. Nodes usually include devices such as switches, routers and software with switch and router features.

**4. what are the types of transmission modes?**

There are 3 types of transmission modes which are given below: **Simplex mode, Half duplex mode, and Full-duplex mode**

**5. difference between parallel and serial transmission?**

Serial Transmission is the type of transmission in which a single communication link is used to transfer the data from one end to another. Parallel Transmission is the mode of transmission in which multiple parallel links are used that transmit each bit of data simultaneously.

**6. list the function of modems?**

A modem transmits data by modulating one or more carrier wave signals to encode digital information, while the receiver demodulates the signal to recreate the original digital information.

**7. what is unguided media example?**

Unguided transmission media are methods that allow the transmission of data without the use of physical means to define the path it takes. Examples of this include **microwave, radio or infrared**.

**8. what is meant by error detection error correction?**

Error detection is the detection of errors caused by noise or other impairments during transmission from the transmitter to the receiver. Error correction is the detection of errors and reconstruction of the original, error-free data.

**9. define multiplexing?**

A multiplexer (MUX) is **a network device that allows one or more analog or digital input signals to travel together over the same communications transmission link**

**10. what are the functions of Ethernet?**

Ethernet is used to **connect devices in a network** and is still a popular form of network connection. For local networks used by specific organizations -- such as company offices, school campuses and hospitals -- Ethernet is used for its high speed, security and reliability.

**11. what is switching?**

Switching is process to forward packets coming in from one port to a port leading towards the destination.

**12. list the types of switching?**

There are 3 common switching techniques: **Circuit Switching**. Packet Switching, Message Switching.

**13. list the objective of telephone systems?**

Objectives and Goals of Telephone Customer Service · First-Call Resolution · Maintaining Customer Relationships · Improve Offering · Add-On Sales.

**14. What are analog signals and digital signals?**

Signal **Analog signal is a continuous signal which represents physical measurements.** **Digital signals are discrete time signals generated by digital modulation**. Example Human voice in air, analog electronic devices. Computers, CDs , DVDs, and other digital electronic devices.

**15. Define ISDN?**

ISDN or **Integrated Services Digital Network** is a circuit-switched telephone network system that transmits both data and voice over a digital

**16. what is broadband ISDN?**

The B-ISDN (broadband integrated services digital network) is a virtual circuit-switched network that can use high-speed packet switching

**17. define atm in networking?**

It converts cells into a bitstream. · It controls the transmission and receipt of bits in the physical medium. · It can track the ATM cell

**18. list the advantages of isdn>**

* Faster Transmissions
* Better Quality Signal
* Multi-Purpose Cables
* Various Call Management Functions

**ISDN Disadvantages**

* Little Flexibility
* Physical Cables
* Geographical Limitations
* Cost Ineffective
* Somewhat Outdated

**19. what is the function of repeater?**

A repeater is an electronic device in a communication channel that **increases the power of a signal and retransmits it, allowing it to travel further**. Since it amplifies the signal, it requires a source of electric power.

**20. definition the function of routers?**

A router is a device that connects two or more packet-switched networks or sub networks. It serves two primary functions: **managing traffic between these networks by forwarding data packets to their intended IP addresses, and allowing multiple devices to use the same Internet connection**.