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Course; csc 402 assignments.

Q1.

* Radio wave
* Micro wave
* infrared

Radio waves are used for multicast communications, such as radio and television, and paging systems. They are used in standard broadcast radio and television, shortwave radio, navigation and air-traffic control, cellular telephony, and even remote-controlled toys.

Microwaves are used for unicast communication such as cellular telephones, satellite networks, and wireless LANs.

Infrared signals can be used for short-range communication in a closed area using line-of-sight propagation. Infrared light is even used to heat food sometimes special lamps that emit thermal infrared waves are often used in fast food restaurants Shorter, near infrared waves are not hot at all in fact you cannot even feel them. These shorter wavelengths are the ones used by your TV's remote control.

Q2.

We need switching because it’s clear that the application of relative small forces allows the routing of very heavy traffic to different destinations. The railroad switch serves as a metaphor for the landline and internet switches which serve the same purpose. Putting this in technical terms it is because router has limited number of interfaces, whereas switch is meant to have more interfaces. Switching provides a practical solution to the problem of connecting multiple devices in a network. It is more practical than using a bus topology; it is more efficient than using a star topology and a central hub.

A switch Switches are devices capable of creating temporary connections between two or more devices linked to the switch. in a datagram network uses a routing table that is based on the destination address.

Q3

The three traditional switching methods are

* Circuit switching.
* Packet switching.
* Message switching.

The most common today are circuit switching and packet switching.

Q4

Guided media:- which are those that provide a conduit from one device to another, include twisted-pair cable, coaxial cable, and fiber-optic cable. A signal travelling along any of these media is directed and contained by the physical limits of the medium. Twisted-pair and coaxial cable use metallic (copper) conductors that accept and transport signals in the form of electric current.

Unguided media:- transport electromagnetic waves without using a physical conductor. This type of communication is often referred to as wireless communication. In unguided transmission transmits the electromagnetic waves without using any physical medium. Therefore it is also known as wireless transmission. In unguided media, air is the media through which the electromagnetic energy can flow easily.

Q5

Asynchronous:-In this, we send 1 start bit at the beginning and 1 or more stop bits at the end of each byte. i.e irregular intervals. In both synchronous and asynchronous transmissions, a bit stream is divided into independent frames. in asynchronous transmission, the bytes inside each frame are also independent.

Synchronous**:-**  In this, We send bits in a serial order without any gaps. I.e regular intervals. In synchronous transmission, the bytes inside each frame are synchronized.

Isynchrounous:-It sends a block of data asynchronously. In isochronous transmission, there is no in-dependency at all. All bits in the whole stream must be synchronized.

Q6

Virtual circuit approach:- In virtual circuit packet switching, a single route is chosen between the sender and receiver and all the packets are sent through this route. Every packet contains the virtual circuit number. As in circuit switching, virtual circuit needs call setup before actual transmission can be started. He routing is based on the virtual circuit number.

Datagram approach:- In datagram packet switching each packet is transmitted without any regard to other packets. Every packet contain full packet of source and destination. Every packet is treated as individual, independent transmission.