**Class IX Computer Application**

**Chapter 4: Communication Technology**

**Type A: Multiple Choice Questions (MCQ)**

1. (iii) Both (a) and (b)
2. (ii) Very costly
3. (iii) MAN
4. (ii) MAN
5. (iv) Cables
6. (ii) Optical fibre cable
7. (ii) Infrared
8. (ii) Fibre optic cables
9. (iii) modem
10. (iv) Interspace
11. (iv) All of these
12. (i) Optic fibre cables
13. (i)HTTP

**Type B: State Whether the Following Statements are True or False**

1. True
2. False
3. True
4. False
5. True
6. False
7. False
8. True
9. True
10. False

**Type C: Fill in the Blanks**

* 1. Network
  2. communication channel
  3. Bluetooth
  4. WAN
  5. Modulation
  6. LAN
  7. RJ-45
  8. Fibre Optic cables
  9. Wireless Fidelity
  10. World Wide Web
  11. Multimedia
  12. Personal Area Network
  13. Hypertext transfer protocol

**Type D: Very Short Answer Type Questions**

(a) Interconnectivity of two or more stand alone systems or devices through some communication channel such that they can exchange their data or utilise the resources of each other, is called computer network.

(b) Communication channel is needed to move the data quickly from one place to another.

(c) The two main advantages of computer network are Data sharing and resource sharing.

(d) LAN, MAN, WAN are the various types of computer networks based on the geographical area covered by them.

(e) Different types of cables are used in wired communication technology are: Co-axial cables, Ethernet or Twisted pair cables and Optical Fibre cables.

(f) 10 to 1000 mbps is the data transmission speed of ethernet cables.

(g) Bluetooth, Infrared and Wi-Fi are the wireless technology is used for short distance data transmission.

(h) Radio Waves transmission technology is used for communicating on a cell phone.

(i) World’s largest publically accessible network of computers which consists of billions of computers spread across the world is called Internet.

(j) Interspace is a futuristic a->roach towards solving the information related problems in the Internet.

(k) Set of rules followed by the different devices while communication to each other is called protocol.

**Type E: Short Answer Type Questions**

(a) Computer network can be used to share information and resources. It helps to quickly transfer the data files and to communicate messages across the long distance.

(b) Due to the miniaturisation of computer hardware and the drastic reduction in its cost it has become one of the cheapest modes of communications and moreover it provides security to the user data which makes it not only just economical but also reliable mode of communication.

(c) LAN is a small group of computes or devices connected in a small geographical area like a room, building or a campus. Its size ranges 0 to 10Kms. WAN is a group of computers or networks spread across the cities, countries or continents. Its size can range from 50Kms to anywhere throughout the world.

(d) Fibre Optic cables more reliable than other cables for the long distance communication as they offer greater bandwidth and the data travels at the speed of light with minimum data loss.

(e) Bluetooth technology is a global short range wireless standard which uses short wavelength radiowaves to connect electronic devices within the range of 10 metres, whereas Wi-Fi is wireless communication protocols used to establish Wireless Local Area Network (WLAN) which uses Wi-Fi Hotspot to transmit data in the range of 100 to 150 feet

(f) The major disadvantages of infrared technology is that its signals cannot penetrate walls or other obstacles the devices can only work in the direct line of sight.

(g) The major a->lications of Internet are:

\*To search information on any imaginable topic.

\* It is used to communicate messages in different modes.

\* It also acts as a major source of entertainment as users can listen music, watch movies and can play different types of games online.

\* It provides facility to undergo online sho->ing, e-banking, e- reservations and to perform different financial transactions directly through Internet.

(h) It is a technology which combines more than one medium of communication for effective deliverance of a message. This technology can be used:

* Creating effective presentation.
* Creating Educational CDs using animation, video and audio.
* To create simulations.
* For entertainment.

(i) TCP/IP-Transmission Control Protocol Internet Protocol

FTP- File Transfer Protocol

**Solutions**

**Type F: Long Answer Type Questions**

(a) The major advantages of using computer in a network system are:

-> Information and Resource Sharing: It helps to quickly share the data, software, peripheral devices, etc.,

-> To Transfer Data Files: Users data files, required to be shared by many individuals at the common workplace can be shared quickly with the help of computer networking.

-> Sharing of Storage Area: A single hard drive with very large storage capacity can be shared by many computers to store their programs and data files

-> Communication Using Different Means: : It helps to quickly communicate messages using different means like sound, text, graphics, etc..

-> Fast and Accurate Communication: Messages can be communicated at a very fast speed and that too without losing any contents across the long distances using computer network.

-> Economical and Reliable: It one of the cheapest mode and secure mode of communication.

(b) Computer network can be categorised as follows:

**Local Area Network (LAN):** LAN is a small group of computes or devices connected in a small geographical area like a room, building or a campus. Its size ranges 0 to 10 Kms. Its speed can range from 10 mbps to 100mbps. These are formed using wired or wireless communication channels.

**Metropolitan Area Network (MAN):** This type of network is larger in size as it spreads from 10 to 50 Kms. It can be large as to city or even more mostly these are formed using wireless communication medium.

**Wide Area Network (WAN):** WAN covers a larger area spread across the city, country or continent. Its size can be beyond 50 Kms area and are established using telephone lines, radio or microwaves, satellite channels, etc.,

(c) Benefits of wireless network technology over the wired network are:

-> As no physical medium is used to connect the devices, it is easier to establish such networks.

-> Using this even the remote areas can be easily connected in the network.

-> Data transfer is faster as compared to wired network.

The various communication channels used for wireless networking are:

-> **Radio Waves and Microwaves:** These channels are used to transmit the data without the use of cables over long distances. Microwave uses high frequency data signals to transfer data and voice within line of sight whereas Radio waves uses frequency in the range of 300 KHz to 10 GHz and is used for Cell phones, cordless phones, AM, FM radio broadcast, etc.

-> **Bluetooth:** It is a global short range wireless standard which uses short wavelength radiowaves to connect electronic devices within the range of 10 metre.

-> **Infrared:** This technology is used to connect the computing devices using short range wireless connecting technology which uses infrared light to transfer data signals between the devices.

-> **Wi-Fi Technology:** This technology is used to establish Wireless Local Area Network (WLAN). It uses radio frequency to transmit data through air within the range of 100 to 150 feet.

(iv) Ethernet or Twisted Pair Cables is the most economical type of cable that can be used for connecting such network as it work on a high data transfer rate. Such type of network is known as LAN (Local Area Network).

**Solutions**

**Type G: Application Oriented Questions**

(a) The five networking components are:

**Network Adapter:** A device which connects communication channel to the computer system.

**Ethernet Cables:** Communication channel through which data travels.

**RJ-45 Connectors:** This is used to connect communication channel with the network adapter.

**Hub:** Central hardware device through which computers are connected in network.

**Switch:** Just like hub this also connects the various computers in the Star Topology.

(b) (i) MAN

(ii) Wireless communication network

(iii) Ethernet or Twisted Pair Cable

(iv) Radio Waves and Microwaves

(v) Hub will help to connect computers in each block whereas router will help to route the data signals to its destination.