Victoria University Of Bangladesh

Program: BSc in CSE

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<u>Ans to The Q: NO. 1</u>

Data Communication: communication is defined as process in which more than one computer transfers information, instruction to each other and for sharing resources. or in other words, communication is a process or act in which we can send or receive data. A network of computer is defined as an interconnected collection of autonomous computers. Autonomous means no computer can start, stop or control another computer.

* Components of Data communication

A communication system is made up off the following components.

1. **Message:** A Massage is a piece of infor-mation That is to be transmitted from one person to another. it could be a text file an audio file, a video file etc.

2. **Sender:** It is simply a device That Sends data message. It can be a computer, mobi telephone, laptop, video, camera

3. **Reciver:** it is a device that receives messages. it can be a computer, telephone mob etc.

4. **Communication channels:** communication channels are the medium that connect t on more workstation. workstation can be connected by either wired media or win media

5. **Set off Rules:** when Someone Sends the it should be understandable to the recei also otherwise it is meaningless. For exam Jack sends to masses Rose - if Jack write Banglor

Bandwidth: The most common bandwidth definition, within The realm of networking is a measure of the maximum capacity of a network connection to transfer data. It's typically gauged in terms bps or it multiples Kbps, Mbps, or Gbps

Consider bandwidth as a highway, were each lane represents a bit of bond -width Types of Bandwidth:

bandwidth can primarily be categorize into two types:
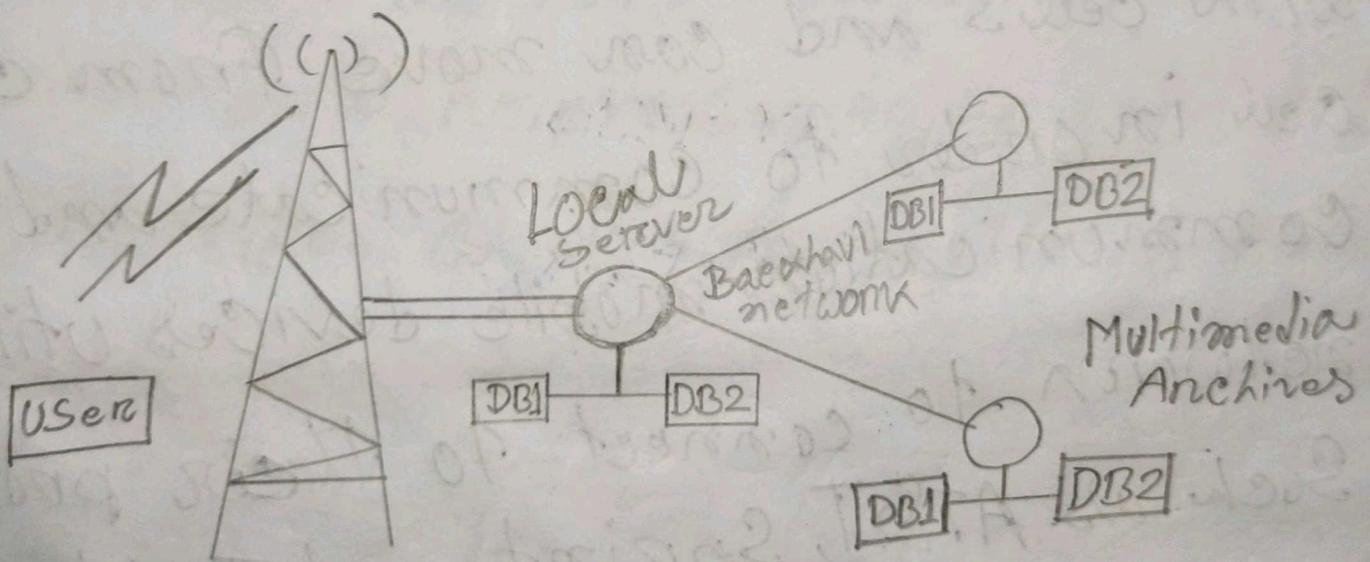
* dedicated bandwidth

* Shared bandwidth

Each types has its unique charac -Teristics.

<u>Ans To The Q: No. 3 (a)</u>

Mobile Cellular Network: cellular network is most commonly the native connectivity method deployed with most cell phones Smartphones, and dial-up devices. It's a mobile-based network used with a radio antenna. These devices are associated with cell's and can move from cell cell in order to communicate and ma communication mobile devices utilize network to connect to their provid Such as AT&T, Sprint and T-Mobile a are some of the most commonly us Those providers then handoff request to the internet, or from device to de
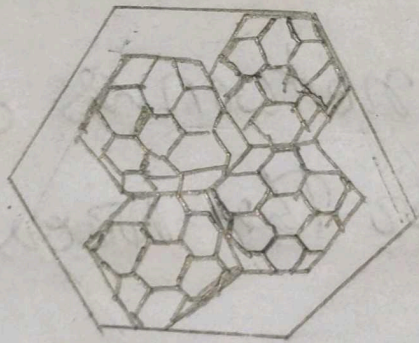
The radio antennas used are common
Set to a Specific band / Frequency
and use Specific cellular technology
Such as global system for mobile
Communications (GSM) and code Division
Multiple Access (CDMA).

USER

Local Server

Backhaul network

DB1

DB2

DB1 DB2

DB1 DB2

Multimedia Archives

Cell cluster: A number of cells grouped together it's called cell cluster An Example: a survey conducted by a company to better understand the preferences and needs of Their customers.
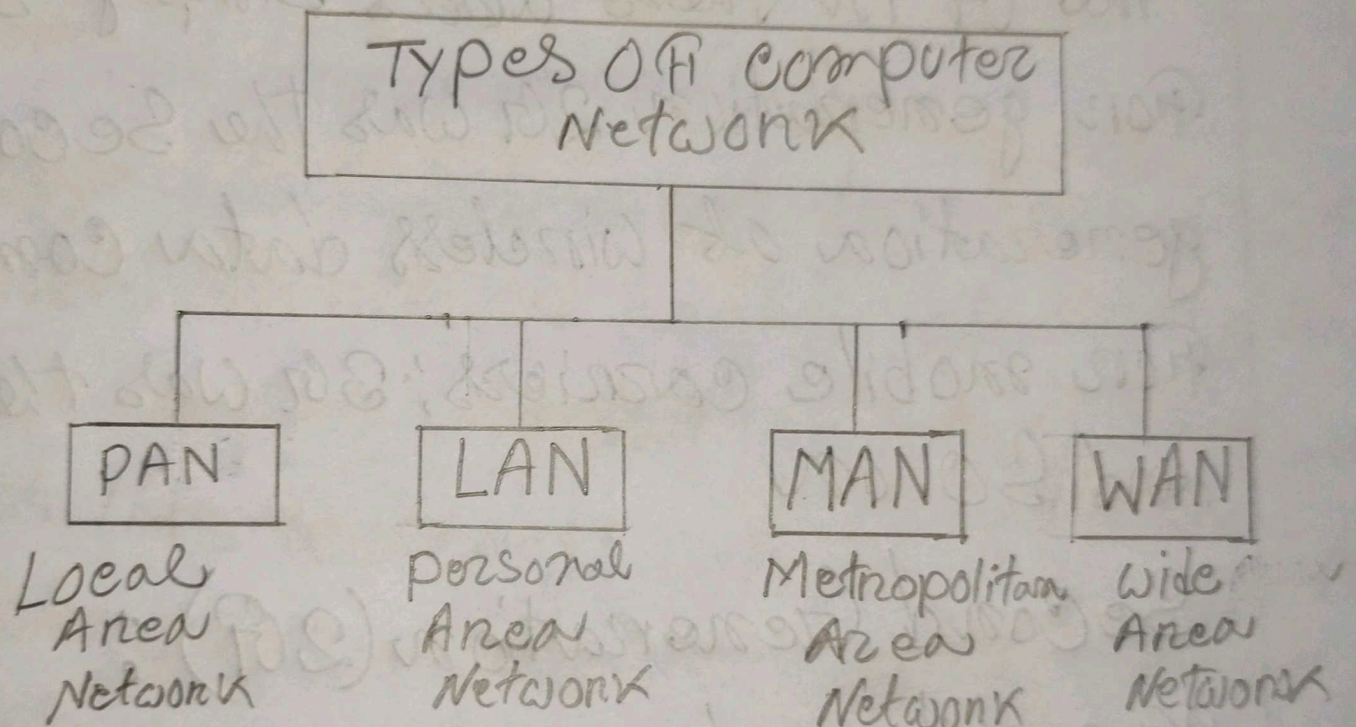

A cell pattern using 04 cell in a cluster.

Ans to The Q: No.4(a)

Network classification based on
area:

The Network allows computers to
connect and communicate with different
computers via any medium, LAN,
MAN, and WAN are the Three major
Types of networks designed to
operate over The area they cover

There are some similarities and
dissimilarities between Them. one of
the major differences is the
geographical area They cover, i,e

LAN covers the smallest area MAN
covers an area larger than LAN and
WAN comprises the largest of all

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┌─────────────────────────┐
│     Types of computer    │
│         Network          │
└─────────────────────────┘
     │
  ┌──────┬──────────┬──────────┐
┌─────┐  ┌─────┐  ┌─────┐  ┌─────┐
│ PAN │  │ LAN │  │ MAN │  │ WAN │
└─────┘  └─────┘  └─────┘  └─────┘
 Local   Personal  Metropolitan  Wide
 Area    Area      Area          Area
 Network Network   Network       Network
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The basic different between the mobile generation of 2G and 3G:

The G in these labels simply stands for generation 2G was the second generation of wireless data communicat for mobile carriers; 3G was the Third and so-on

Second Generation (2G):

2G mobile network is based on GSM Global system for mobile communicatio This Technology was developed in Finla 1991 Messages are encrypted in this technology use less battery and hence

leads to less power consumption. Also provided data services for mobile phones. Advanced version are 2.5 G and 2.7 G

2. Third Generation (3G):

3G mobile network was developed in Jap in 2001 to achieve heights of speed whi was lackings in 2G Technology. The Stand of This Technology was set by internation telecommunication union (ITU). This tee nology provided users with services li GPS (Global positioning system) video conferencing and mobile television.