The main purpose of networks is…	
Your ideas	*Text*
Computer networks may be classified by…	
Your ideas	*Text*

Task 8

Read the text and mark with color the key concepts. Compare your notes with your groupmates.

Computer network is a group of two or more computers that are interconnected to share resources (data, hardware, software...) Two computers are said to be interconnected if they are able to exchange information.

Experts in the field of networking debate whether two computers that are connected together using some form of communications medium constitute a network but we will take above definition as relevant.

Network may involve other devices such as routers, switches, network printers, IP telephones etc. so, in general, we speak about nodes of a network.

The nodes of a computer network may be classified by many means as personal computers, servers, networking hardware, or general purpose hosts. They are identified by hostnames and network addresses. Hostnames serve as memorable labels for the nodes, rarely changed after initial assignment. Network addresses serve for locating and identifying the nodes by communication protocols such as the Internet Protocol.

The main purpose of networks is to transfer data from source to destination. Data is transferred by different types of signal and represented with sequence of bits (ones and zeros). Various physical media can be used for transmission of signal: coaxial cable, twisted pair, fiber optics and air.

Computer networks may be classified by many criteria, for example, the transmission medium used to carry signals, bandwidth, communications protocols to organize network traffic, the topology, traffic control mechanism, organizational intent. Another important criterion for classifying networks is their scale. As shown in Figure 8 there are:
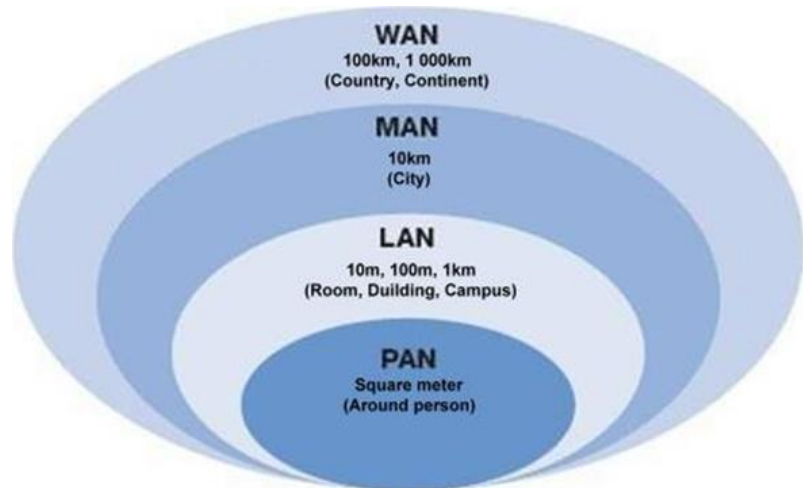
Personal Area Network (PAN)

Local Area Network (LAN)

Metropolitan Area Network (MAN)

Wide Area Networks (WAN)

Fig. 8

Personal Area Network (PAN) - The interconnection of devices within the range of an individual person, typically within a range of 10 meters. For example, a wireless network connecting a computer with its keyboard, mouse or printer is a PAN. Also, a PDA that controls the user's hearing aid or pacemaker fits in this category. Another example of PAN is a Bluetooth. Typically, this kind of network could also be interconnected without wires to the Internet or other networks.

Local Area Network (LAN) - Privately-owned networks covering a small geographic area, like a home, office, building or group of buildings (e.g. campus). They are widely used to connect computers in company offices and factories to share resources (e.g., printers) and exchange information. LANs are restricted in size, which means that the worst-case transmission time is bounded and known in advance. Knowing this bound makes it possible to use certain kinds of designs that would not otherwise be possible. It also simplifies network management. Traditional LANs run at speeds of 10 Mbps to 100 Mbps, have low delay (microseconds or nanoseconds), and make very few errors. Newer LANs operate at up to 10 Gbps.

Metropolitan Area Network (MAN) - Covers a larger geographical area than is a LAN, ranging from several blocks of buildings to entire cities. MANs can also depend on communications channels of moderate-to-high data rates. A MAN might be owned and operated by a single organization, but it usually will be used by many individuals and organizations. MANs might also be owned and operated as public utilities. They will often provide means for internetworking of LANs. Metropolitan Area Networks can span up to 50km, devices used are modem and wire/cable.

Wide Area Networks (WAN) - Computer network that covers a large geographical area, often a country or continent. (Any network whose communications links cross metropolitan, regional, or national boundaries). Less formally, a network that uses routers and public communications links.

Task 9

Mark the following sentences as True or False. Find in the text the lines/paragraphs proving your choices.

1. The nodes of a computer network are identified by hostnames and IP. **True   False**

2. Data is transferred by different types of signal and represented with sequence of ones and zeros. **True   False**

3. Another important criterion for classifying networks is their physical size. **True   False**

4. Typically, PANs require extra cable and wire to set up. **True   False**

5. LANs have a short propagation delay. **True   False**

6. WANs often provide means for internetworking of LANs. **True   False**

7. Metropolitan Area Network may be both private and public. **True   False**

8. Wide Area Networks don't span large locality. **True   False**

Language Work

Task 10

Find words or phrases in the text that mean the following:

1) a networking device that forwards data packets between computer networks.

2) a label that is assigned to a device connected to a computer network and that is used to identify the device in various forms of electronic communication.

3) a protocol, or set of rules, for routing and addressing packets of data so that they can travel across networks and arrive at the correct destination.

4) the amount of data moving across a network at a given point of time.

5) a standard for the short-range wireless interconnection of mobile phones, computers, and other electronic devices.

6) a medium through which a message is transmitted to its intended audience.

7) a device that converts signals produced by one type of device to a form compatible with another.

Task 11

Find in the text the equivalents to the following words and phrases:

Вузли комп'ютерної мережі, мережеве обладнання, розміщення та ідентифікація, фізичні носії, обмежений за розміром, час передачі, швидкість передачі даних від середньої до високої, засоби для міжмережевої взаємодії, громадські засоби зв'язку.

Task 12

Study the forms on the left. Decide which sentence, illustrates each of the meanings on the right. (See Grammar Reference 1-3)

	Sentence		Passive Voice Construction
1	The nodes of a computer network may be classified by many means as personal computers, servers, networking hardware, or general purpose hosts.	a	Passive sentence with present reference (reporting verbs)
2	Computer networks are usually classified by experts according to their scale.	b	Passive sentence with generalised agent
3	Metropolitan Area Networks are considered to have outlived the system.	c	Passive sentence with an instrument
4	LAN is considered a privately-owned network.	d	Passive sentence with an agent
5	Ted has recently got his computer connected to the company's LAN.	e	Passive sentence with a complement
6	Two computers are said to be interconnected if they are able to exchange information.	f	Passive construction which describes a service performed for us by someone else
7	Data is represented with sequence of bits (ones and zeros).	g	Passive sentence with past reference (reporting verbs)