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**ОТЧЕТ**

**UNIT 11**

«Networks»

по дисциплине:

**Профессиональная подготовка на английском языке**

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**Starter**

1. With the help of this diagram, try to describe the function of these components of a typical network system:

1. A file server – a computer that is connected to a network and provides the file storing service for other computers in the network.
2. A bridge – a device whose function is to link parts of the same type of networks altogether.
3. A router - a device whose function is to find the optimal path for the network packet transmitting.
4. A backbone – a part of a network, which provides a connection between various network parts.
5. A LAN – Local area network – a network that set up within a local space such as standalone buildings or rooms.
6. A gateway - a device whose function is to link heterogeneous networks together.
7. A modem – a device that connects a computer to a network.

2. Now read these definitions to check your answers. You may also refer to the Glossary.

**Reading**

3. Now study this text and the diagram of a simple home network setup. Match the diagram key to the components of the network.

|  |  |  |
| --- | --- | --- |
| 1 | e | Line receiver delivering home entertainment audio to speakers within the home. |
| 2 | h | TV set replaying digital TV broadcasts relayed from the receiver by the home entertainment system. |
| 3 | c | Network modem allowing clients to access the Internet simultaneously. Ideally, this would be replaced by an ISDN adapter or DSL modem fitted inside the server. |
| 4 | a | Thin client comprising a display, keyboard, mouse, floppy and CD-ROM drive. If the client is NetPC-based, it will have its own processor and memory. A dumb terminal will simply act as an interface to the real computer, the server. |
| 5 | d | Network printer connected to any client. |
| 6 | g | Line driver connected to the home entertainment system; the cable TV player, DVD player, etc. |
| 7 | b | Home server. It contains roughly 5Gb of storage per terminal and one or more processors, depending on whether it is connected to network computers or to cheaper dumb terminals. |
| 8 | j | Entertainment system delivery network. This also hooks up to the server to control the system and receive digital audio and video from it. |
| 9 | f | Entertainment network control pad. While the system can be controlled by a PC, there would be one of these per connected room to ensure that the client does not need to be activated to use the system. |
| 10 | i | Data line linking clients to server. |

**Language work**

3. Complete these definitions with the correct participle of the verb given in brackets.

1. A gateway is an interface **enabling** dissimilar networks to communicate.
2. A bridge is a hardware and software combination **used** to connect the same type of networks.
3. A backbone is a network transmission path **handing** major data traffic.
4. A router is a special computer **directing** messages when several networks are linked.
5. A network is a number of computers and peripherals **linked** together.
6. A LAN is a network **connecting** computers over a small distance such as within a company.
7. A server is a powerful computer **storing** many programs **shared** by all the clients in the network.
8. A client is a network computer **using** for accessing a service on a server.
9. A thin client is a simple computer **comprising** a processor and memory, display, keyboard, mouse and hard drives only.
10. A hub is an electronic device **connecting** all the data cabling in a network.

5. Link these statements using a relative clause with a participle..

The technology is here today.

It is needed to set up a home network.

The technology needed to set up a home network is here today.

You only need one network printer.

It is connected to the server.

You only need one network printer connected to the server.

Her house has a network.

It allows basic file-sharing and multi-player gaming.

Her house has a network allowing basic file-sharing and multi-player gaming.

There is a line receiver in the living room.

It delivers home entertainment audio to speakers.

There is a line receiver delivering home entertainment audio to speakers in the living room.

Eve has designed a site.

It is dedicated to dance.

Eve has designed a site dedicated to dance.

She has built in links.

They connect her site to other dance sites.

She has built in links connecting her site to other dance sites.

She created the site using a program called Netscape Composer.

It is contained in Netscape Communicator.

She created the site using a program called Netscape Composer contained in Netscape Communicator.

At the centre of France Telecom's home of tomorrow is a network.

It is accessed through a Palm Pilot-style control pad.

At the centre of France Telecom's home of tomorrow is a network accessed through a Palm Pilot-style control pad.

The network can simulate the owner's presence.

This makes sure vital tasks are carried out in her absence.

The network can simulate the owner's presence making sure vital tasks are carried out in her absence.

The house has an electronic door-keeper.

It is programmed to recognize you.

This gives access to family only.The house has an electronic door-keeper programmed to recognize you giving access to family only.

**Problem Solving**

6. Work in two groups, A and B. Group A, list all the advantages of a network. Group B, list all the disadvantages. Then together consider how the disadvantages can be minimized.

|  |  |  |
| --- | --- | --- |
| Advantages of a network | Disadvantages of a network | Ways of disadvantages minimization |
| 1. It is easy to share data between users; 2. Less spending on peripherals such as printers, scanners, etc.; 3. The network users can easily communicate via messengers and email; | 1. Networks require additional equipment like routers, cables, etc.; 2. It needs specialists who can set up networks and manage them; 3. Less reliability. If shared equipment fails, all users of the network get affected; 4. Networks connected to the Internet can be the aim of hackers; 5. Viruses once infecting the network computer can quickly spread across the network. | 1. It is helpful to use Wi-Fi connections. 2. Special user-friendly software can help users without networking knowledge to cope with network management. 3. Presence of quickly interchanged reserve equipment can do this disadvantage less critical. 4. To overcome this problem help well-timed system update that eliminates detected backdoors, and the antivirus and firewall software. 5. The same as for point four. |

**Speaking**

7. Transmission modes Work in pairs, A and B. Explain to your partner how one mode of transmission between computers operates with the help of the text provided. Your explanation should allow your partner to label his/her diagram.

Asynchronous transmission

Asynchronous transmission is a method of data transmission along a serial bus. According to this technique data sent from transmitter to receiver at any time convenient to the transmitter. The transmission of data goes byte after byte. To initialize data receiving transmitter sends the special 'starting' bit. Then go bits made up a byte and finally the 'stopping' bit. The transmitted byte can be marked with a bit helped to detect errors. By means of this bit, the byte can be checked for error on the receiver side. The advantage of this method of data transmission is that the interface equipment is cheaper. The disadvantage is the low rate of data transmission.

**Writing**

8. Using the lists you compiled in Task 6, describe the advantages and disadvantages of networks. Try to link some of the advantages and disadvantages as in these examples.

Although it is easy to share data between users, also viruses can quickly spread across the network.

Networks allow less spending on peripherals such as printers, scanners, etc., however, if shared equipment fails, all users of the network get affected.

Although the network users can easily communicate via messengers and email, it needs specialists who can set up networks and manage them;

**Specialist reading**

A. Find the answers to these questions in the following texts.

|  |  |  |
| --- | --- | --- |
|  | Questions | Answers |
| 1 | Into what units is data subdivided by the following layers?  a transport layer  b network layer | The transport layer divides data into segments, in turn, the network layer forms data to packets. |
| 2 | What is the purpose of a transmission checksum test? | The purpose of a transmission checksum test is defining if the data is scrambled. |
| 3 | How long does the data-link layer keep a copy of each packet? | The data-link layer keeps a copy of each packet until it receives confirmation from the next point along the route that the packet has arrived undamaged. |
| 4 | What processes can be carried out at intermediate nodes? | An intermediate node calculates and verifies the checksum for each packet. It may also reroute the message to avoid congestion on the network. |

Which network communications layer is described by each of the following statements?

|  |  |  |
| --- | --- | --- |
| a | Makes sure that the message is transmitted in a language that the receiving computer can understand | The presentation layer |
| b | Protects the data being sent | The transport layer |
| c | Encodes and sends the packets | The physical layer |
| d | Supervises the transmission | The data-link layer |
| e | The part of a communications process that a user sees | The application layer |
| f | Starts communications and looks after communications among network nodes | The session layer |
| g | Chooses a route for the message | The network layer |
| h | Makes backup copies of the data if required | The transport layer |
| i | Confirms the checksum, then addresses and duplicates the packets | The data-link layer |

B1. Match the terms in Table A with the statements in Table B.

Table A

|  |  |
| --- | --- |
| a | Bracketing |
| b | Half-duplex |
| c | Full-duplex |
| d | Checksum |

Table B

|  |  |
| --- | --- |
| I | Transmission mode in which each computer takes turns sending and receiving |
| II | Mathematical calculations based on the contents of data |
| III | Set boundaries for the beginning and end of a message |
| IV | Transmission mode in which both computers send and receive at the same time |

Answers

|  |  |
| --- | --- |
| Transmission mode in which each computer takes turns sending and receiving | Half-duplex |
| Mathematical calculations based on the contents of data | Checksum |
| Set boundaries for the beginning and end of a message | Bracketing |
| Transmission mode in which both computers send and receive at the same time | Full-duplex |

B1. Mark the following statements as True or False:

|  |  |  |
| --- | --- | --- |
| a | Most of the work that an application does to prepare a message for sending over a network is not seen by the user. | True |
| b | ASCII is always used to transmit data | False |
| c | The encryption layer compresses the message. | False |
| d | The network layer keeps track of how many packets are in each message. | True |
| e | The network layer keeps a copy of each packet until it arrives at the next node undamaged. | False |
| f | Analogue signals are used on ordinary telephone lines. | True |
| g | When a message arrives at its destination, it passes through the same seven network communications layers as when it was sent, but in reverse order. | True |

B3. Identify which layer attaches the following headers to a network transmission:

|  |  |  |
| --- | --- | --- |
| a | Specifying the language, the compression and encryption schemes | The presentation layer |
| b | Identifying each segment's checksum and its position in the message | The transport layer |
| c | Containing the sequence of packets and the address of the receiving computer | The network layer |
| d | Marking the beginning and end of the message and specifying whether the messages will be sent half-duplex or full-duplex | The session layer |
| e | Identifying the sending and receiving computers | The application layer |

1. Fill in the missing words in the following sentences then put the sentences in the correct order:

c The message is reconverted into bits by the physical layer.

g The data-link layer confirms the arrival of the packets, logs them in, and calculates the checksum for each packet.

f The incoming packets are recounted by the network layer for security and billing purposes.

a The checksum is recalculated by the transport layer which also reassembles the message segments.

h The parts of the message are holt by the session layer until the message is complete.d The session layer then sends the message to the next layer.

b The message is expended and decrypted by the presentation layer.

e The application layer converts the bits into readable characters and directs the data to the correct application.