



# INTRO TO NETWORKING

Aa Question	≡ Answer	📎 Picture
<u>Mark false statement regarding the comparison of packet switching and circuit switching method.</u>	Circuit Switching(connection is established via sequence of nodes and all data is transferred through this sequence): fast fluent fault intolerant Packet Switching: message divided into packets which find their ways to target node individually: slower fault tolerant	
<u>What are the main properties of Diffie-Hellman algorithm?</u>	the idea is that if both sides keep a secret number and only products of the one-way functions are sent via the open channel, then no one else can calculate the final shared secret.	
<u>On what principle does electronic mail encryption work?</u>	Generate a random key Using that key symmetrically encrypt the text Asymmetrically encrypt the key Send the key and text to the recipient The encrypted key is taken and the recipient's private key is used to decrypt it The data can be symmetrically decrypted using key	
<u>On what principle does electronic signature work?</u>	The sender calculates's hash of a text, using any hash function. Then he encrypts the hash with his private key and attaches it to the message The recipient calculates hash for the given text Then it decrypts encrypted key using senders public key if calculated hashes are equal then we have a digital signature	
<u>Which statement about symmetric and asymmetric encryption algorithms is true?</u>	Symmetric Encryption: fast, suitable for large amount of data, but partners must safely exchange the key: DES, Blowfish. Partner must have the same piece of information (the substitution or transposition key, the grid mask etc.) for decoding that we use for encoding Asymmetric Encryption: no need for shared secret(one key is public the other one is private) but very slow: RSA, DSA. We need to trust the published key.	
<u>What properties are required for hash algorithms used in cryptography?</u>	Even a minor change in the original data causes a fundamental change in the hash value. Finding a text from a hash must be "difficult", as must be finding another text that has the same hash value as a given text.	
<u>Which of the following statements regarding LAN is true?</u>	* There is a centralized system(core layer) * Every computer has the potential to communicate with any other computers of the network (distribution layer) * Short distance, (access layer) is terminated near the end devices * Short distance also leads to faster connection * Scalability, easy to expand the network by adding new hosts	
<u>Which of the following statements regarding WAN is true?</u>	Wide Area Network: remote access, larger distances, multiple owners, notable delay, distributed control * Multiple Owners - there are tier 1-3 owners <u>The main purpose of LAN is communication and remote access</u>	
<u>Mark untrue statement regarding layered network architecture.</u>	Layer 7, the <b>application</b> layer, is the closest layer to the end user Layer 6, the <b>presentation</b> layer, converts semantics implementations on different platforms for application Layer 5, the <b>session</b> layer, controls dialogs between applications Layer 4, the <b>transport</b> layer, transmits and receives data between source and target applications.(end-to-end) Layer 3, the <b>network</b> layer, ensures the transmission of data blocks with between two nodes Layer 2, the <b>data link</b> layer, transfers data frames between two connected nodes Layer 1, the <b>physical</b> layer, transmitting and receiving raw bit data between a node and a physical medium. <u>Facilitates writing applications because it is possible for hosts to communicate immediately on the application layer without sing lowerlayers</u>	
<u>How does the vertical cooperation between layers work?</u>	See attachments	
<u>Mark untrue definition of terms segmentation, fragmentation, multiplexing and encapsulation.</u>	<b>Multiplexing</b> - combine and send the multiple data streams over a single medium. This method means that several com-channels at one layer use the same com-channel at the underlying layer. The individual communication channels are distinguished via ports. <b>Segmentation</b> - divides data into smaller blocks called segments(transport layer port) <b>Fragmentation</b> - breaks packets into smaller pieces called fragments(network layer ip) In <b>encapsulation</b> , layer <b>n-1</b> builds PDU, which has body of PDU(n) and header with control information.	
<u>Mark true statement regarding P2P and/or the client-server application models.</u>	<b>Client-server</b> : client knows the fixed server address, client connect to the server or send requests, server usually handles more clients. Data flow: server-client, client-server( DNS, WWW). <u>Can have several connections opened as a client and as a server</u> <b>P2P</b> : partners do not know data resource addresses, no clear roles, each partner is servers and a clients	

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<u>Which statement regarding URI is correct?</u>	First, <b>scheme</b> (http, ftp) Second, <b>authority</b> which specifies ip or domain Third, <b>path</b> similar to filesystems <u>Query parameters may be part of a URI for some schemes</u>	
<u>Which of the following statements about domain names is correct?</u>	Top level domains are registered by ICANN: technical groups by categories ISO country codes Internationalized codes currently even private TLDs are allowed Second level domains SLD; administered by owner	
<u>What does belong among the tasks performed by the application layer in TCP/IP model?</u>	Establish communication between client and server(a client usually addresses a server using a URL), Dialog control flow, message format, message type, message and information field semantics, transport layer interaction The application layer sends either messages, or a stream of data. It passes the data and the socket address to the protocol at the transport layer. To provide a communication channel for the client and server part of application	
<u>What doesn't belong among the tasks performed by the network layer in TCP/IP model?</u>	Packet forwarding and routing are network layer functions A network protocol has to define how: all the operations within a network, and also how entities outside the network must interact. Typical network protocols define: How data gets from point A to Point B How computers and devices communicate, For example: How a file is printed on a printer How data is transmitted over a telephone line.	
<u>What is the correct sequence of layers in OSI model from top-to-bottom?</u>	Application 7 Presentation 6 Session 5 Transport 4 Network 3 Data Link 2 Physical 1	
<u>Which of the following protocols is used in TCP/IP on the transport layer?</u>	TCP SCTP UDP	
<u>Which of the following protocols is not a protocol of the TCP/IP application layer?</u>	TCP, UDP ARP	
<u>Which of the following protocols is used in TCP/IP on the application layer?</u>	DNS, SIP, HTTP, SMTP, FTP, NFS, XDR, RPC	
<u>How do we call the protocol used to transmit web pages?</u>	HTTP	
<u>What will happen if TCP packets arrive in incorrect order?</u>	TCP reassembles packets or initiate retransmission	
<u>What will happen if UDP packets arrive out of order?</u>	Nothing, <b>it is application's job to confirm the delivery and resend the lost data</b> e.g when a delivery problem occurs, the application can try another data source, or it can ask the user whether to stop or continue. <u>Application will rearrange packets if needed</u>	
<u>What takes place during the three-way handshake?</u>	Both parties of the TCP connection initialize SEQ numbers The server confirms the client readiness to establish a TCP connection <b>The client sends SYN flag, with the initial value as SEQ number(c).</b> <b>The server(confirms) then sends ACK flag, with the number (c+1). Then the server sends SYN flag with number (s) The client(confirms) by sending ACK flag (s+1)</b>	
<u>With what TCP/IP layer the term port is related?</u>	Application layer	
<u>What are ports in OSI 4 used for?</u>	OSI layer 5 'session layer' uses the ports defined in layer 4 to create sockets and sessions between communicating devices/programs/etc.	
<u>Which of the network address translation (NAT) characteristics is correct?</u>	Private-public address translation a.k.a. IP masquerading. NAT may be used for translation between two private networks, too.	
<u>What type of addresses is used on data link layer?</u>	Physical(MAC) Ethernet MAC	

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<u>What type of addresses is used on physical layer?</u>	<i>Bits?!</i> Physical	
<u>Mark true statement regarding MAC addresses (in a functional network).</u>	<u>One network may have multiple MAC addresses.</u> Current NICs have the MAC address stored in memory. The ARP is used to convert between network and MAC addresses. The data link layer takes a packet and prepends a header with the destination and source MAC addresses and the network layer protocol number <u>In LAN, two cards with the same MAC address can operate</u>	
<u>With what OSI layer the term Ethernet is related?</u>	Physical(Data Link layer) Phsical and data link layer	
<u>What statement about keys and certificates is true?</u>	For certificate verification, it is necessary to verify the issuer(CA). A web of trust, where <b>a user's key and identity tag is signed by some other users</b> . Users who trust the signers' keys may decide to trust your key as well from now on(PGP keys) The Public Key Infrastructure framework, <b>A CA signs your key+tag pair and if someone trusts this CA, your key is trusted, too</b> Certificate is a <b>key with owner identification tag</b> , signed by an issuer i.e. CA The list of "proven" CAs is distributed together with the <b>operating system or with software</b> that will use it.	
<u>Which statement about SSL and/or TLS is true?</u>	See attachment	
<u>Which of the following statements about the nature of DNS protocol is correct?</u>	DNS client may use either UDP or TCP Common queries are handled <b>in UDP</b> (it's fast) The limit for a UDP message was <b>512 bytes</b> (EDNS extended is used) <b>If the response doesn't fit</b> , server sends only <b>part that fits</b> and sets truncated flag. The client can then <b>repeat the query</b> using <b>TCP</b> to obtain a complete answer. <u>The DNS cache poisoning attack consists in the server sending not only an authoritative answer but also additional false data with AUTHORITY and ADDITIONAL sections</u> <u>DNS is a binary protocol, info unit is called resource record(RR)</u>	
<u>Which statement correctly describes common implementation of operation system service "find out the IP address for a given domain name"?</u>	The Domain Name System ( <b>DNS</b> ) is used to convert between domain and IP addresses <u>The info is learned by a DNS client using recursive query sent to one of the nameservers specified in its configuration by their IP addresses</u>	
<u>Which statement about the security aspects of the DNS protocol is correct?</u>	If an attacker can read a query, he can send faked answer;however,it's hard to guess the exact contents of the query For better security, an extension to the DNS protocol called <b>DNSSEC</b> was developed. The option for attacker is to expect the question, guess its content and send a false answer. This procedure is complicated <b>by the random selection of a source port</b> of the UDP query and a <b>random ID</b> – this gives billions of possibilities.	
<u>Mark true statement regarding nameservers.</u>	Primary server manages <b>domain RR database</b> <u>Secondary server backups the contents of the primary one. However, it responds to client queries independently to the primary server. All other servers are <b>caching-only</b>, meaning they cache any recently accessed foreign domains.</u> <u>Caching-only server for specific domain only knows from this domain only records acquired by previous queries and only for the term before they expire.</u> Secondary servers might have different data than primary one for some time	
<u>Which statement about the nature of the FTP protocol is correct?</u>	For every data transmission, a peer opens a new connection	
<u>Which of the following statements about FTP security issues is correct?</u>	FTP was not built to be secure. It is generally considered to be an insecure protocol because it relies on clear-text usernames and passwords for authentication and does not use encryption. Data sent via FTP is vulnerable to sniffing, spoofing, and brute force attacks, among other basic attack methods. <u>One of the FTP security concerns is that during active transmission the FTP server tries to establish a connection into client's network</u> <u>FTP protocol transfers all data unencrypted and thus allowes password eavesdropping</u>	
<u>If an FTP client sends a request to an FTP server on standard port, which of the following ports may contain response as source port?</u>	20 or generic in the active connection server can only use port 20(ftp-data)	

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<u>Which of the following statements about SMTP protocol is correct?</u>	mail transmission(TCP <b>port 25</b> ) Each node that receives and delivers mail is called a Mail Transfer Agent ( <b>MTA</b> ) MX record contains info about MTA that the data been passed to with priority number(the lower-higher) This protocol is not suitable for transferring large files <u>The message sender given in the envelope(of SMTP protocol) may be empty; in this case, the mail is a Delivery Status Notification</u> 450 (temporary error) or 550 (permanent error)	
<u>Which statement about SMTP extensions for file transmission and diacritics is correct?</u>	<u>Files are currently attached to a message as nodes of MIME structure</u>	
<u>Which command is not an SMTP protocol command according to RFC 821?</u>	HELO <SP> <domain> <CRLF> MAIL <SP> FROM:<reverse-path> <CRLF> RCPT <SP> TO:<forward-path> <CRLF> DATA <CRLF> RSET <CRLF> SEND <SP> FROM:<reverse-path> <CRLF> SOML <SP> FROM:<reverse-path> <CRLF> SAML <SP> FROM:<reverse-path> <CRLF> VRFY <SP> <string> <CRLF> EXPN <SP> <string> <CRLF> HELP [<SP> <string>] <CRLF> NOOP <CRLF> QUIT <CRLF> TURN <CRLF>	
<u>Which application protocol is used for electronic mail?</u>	SMTP	
<u>Which of the following statements about roles of particular components in electronic mail transmission is true?</u>	The Mail User-Agent (MUA) is responsible for preparing, creating, and putting the message in the form of an envelope for transmission. The Mail Transfer Agent (MTA) then transfers this message across the internet to the particular recipient. POP/IMAP <u>The mail exchanger defined by an MX RR in DNS is a mail server designated for reception for particular domain Every MTA participating on the transfer usually adds tracing info to the mail header</u>	
<u>Mark header that does not occur in messages according to RFC 822.</u>	Date Sender Reply-to To Cc Bcc Message-id Received	
<u>Which of the following statements about the use of mail transfer protocols is correct?</u>	An application for mail handling (MUA) can be run directly on a mail server (MTA);it might be possible to connect to server through SSH or HTTP For receiving messages from remote server mta, an email client mua may use either of the pop or imap protocols	
<u>Which statement about security aspects of email protocols is correct?</u>	Mail security client server, Spam protection <u>A user has to authenticate on the server for approaching mails via POP and IMAP protocol In IMAP protocol, encryption may be achieved either by establishing connection to another port(993 instead 143) or within protocol by starttls command</u>	
<u>Which statement about authenticity of the message origin is correct?</u>	<u>The digital signature is the only way to verify the message of the author;the sender cannot be verified by a software;the sender authenticity can't be guaranteed by means of SMTP protocol</u>	
<u>Which statement about the nature of HTTP protocol is correct?</u>	<b>each user request is sent by the client as completely independent.</b> If a web page consists of text and three images, then there will even be four independent requests <b>the client can use the same TCP connection for multiple serial requests</b> <b>The entire communication is stateless</b> , the server has no idea about the current state of the interaction <b>the Host header is mandatory</b> , which specifies which server the client is connecting to. Because multiple servers can run at the same IP address, and header distinguishes which server a request is addressing. In the server response, <b>the first line is a status line</b> , again containing the <b>protocol number</b> , a three-digit <b>response code</b> , and a verbal description of the response. <b>state must be carried via additional data, so called cookies:</b>	
<u>Which of the following methods ("commands") exists in HTTP protocol?</u>	GET - a client requests a page or document HEAD - server replies only with headers POST - upload info(file) on server PUT - overwrites the contents of the document DELETE CONNECT OPTIONS TRACE PATCH	
<u>What does the acronym HTML signify?</u>	Hyper Text Markup Language <u>A language that allows writing text together with non-text elements, formatting and other metainfo</u>	
<u>Which statement regarding cookies is correct?</u>	<u>Cookies compensate for the missing session state information within stateless HTTP</u>	

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<u>Which statement correctly describes the issues of remote login by means of telnet and SSH protocols?</u>	The telnet protocol transfers passwords unencrypted, secure login is possible e.g by means of OTP(challenge-response system) If a SSH server sends a new unknown key to the client, the program asks the user whether to accept it. The user should not answer without verifying the key.	
<u>Which statement about security of SSH access is correct?</u>	<b>The user creates a public/private keys and stores the public key in a specified location on the server. If the client can prove that he holds the corresponding private key,</b> the user does not have to enter the password for the remote account. If the account is attacked then <b>server is compromised</b> (using only keys) An attacker can have <b>information about other computers</b> from which you are allowed to access this account from the list of stored public keys	
<u>Which application protocol (set) is used for VoIP?</u>	H.323, SIP, RTP, RTCP	
<u>What does the VoIP (Voice over IP) term denote?</u>	General name for many technologies for <b>voice transfer</b> over IP network. It does <b>not</b> refer to <b>one specific protocol</b> , but generally to any tool for <b>transmitting (not only)</b> voice over a TCP/IP network	
<u>What does the SIP (Session Initiation Protocol) term denote?</u>	One of the VoIP (internet telephony) protocols; a text protocol that replaces some older binary protocols from the H.323 set It establishes connections and negotiates device properties It is a <b>text protocol</b> Can use <b>both TCP and UDP</b> the agreement on device properties and data channel parameters, is solved by the Session Description Protocol (SDP) RTP/RTCP - audio and video a <b>protocol</b> that builds base for arrangement between communicating parties about parameters of data channels	
<u>Which statement about deterministic and non-deterministic access to a medium is true?</u>	Deterministic access means that a host must wait with transmitting until it gets permission	
<u>If we call the ping program to the address 127.0.0.1, what can we gather from the result:</u>	4 packets transmitted, 0 packets received, 100.0% packet loss - IP software on the local computer has been improperly installed	
<u>Mark true statement about the relation of data link and physical layers in OSI and TCP/IP.</u>	TCP/IP protocol suite is built on IP protocol, thus it does not deal with the data link layer	
<u>How can Spanning Tree Protocol or Spanning Tree Algorithm be described?</u>	Switches use distributed version of STA realized by means of STP <b>The problem of reducing the graph and getting rid of the circle is known as the problem of finding a spanning tree of a graph.</b> Dropping an edge is in practice implemented as converting (some ports of the) switch to a blocking mode, in which frames are not forwarded and the switch merely monitors for a failure of the second switch, which is in a forwarding mode. <b>STP can protect the network from loops, but it means slower startup time of the lines</b>	
<u>How will the source and destination IP and MAC addresses of a response from the server to a request from a notebook look like travelling on subnet marked III?</u>	Source IP and MAC: server, destination MAC: router B, destination IP: notebook	
<u>Which of the following statements about RFC is true?</u>	RFCs are used for publishing of standards, but many applications do not respect them When RFC is updated it gets a new number, The RFC index file serves to find out the current status.	
<u>How many conductors are in a cable denoted as unshielded twisted pair (UTP)?</u>	8	

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<u>User is not able to display a web page.</u> <u>When using IP address in URL, the page is displayed correctly. Which protocol is responsible for the error?</u>	DNS protocol	
<u>Which statement correctly describes TCP or UDP?</u>	<u>UDP contrary to TCP provides more regular data flow with a risk of data loss</u>	
<u>Choose correct statement about the principle of a routing algorithm.</u>	<u>If a direct record is found in the routing table, the packet is sent over given interface; if the record is indirect, the packet is sent to the router stated within</u>	
<u>Which of following combinations represents minimum network covering these unicast addresses:</u>	<u>10.1.1.94, 10.1.1.97, 10.1.1.99 : None 10.1.1.94, 10.1.1.97, 10.1.1.99: 10.1.1.64/26</u>	
<u>Mark untrue alternative, how a host can learn the IP address it is allowed to use.</u>	<u>It can read the IP address assigned by the manufacturer from network interface car</u>	
<u>What can we deduce from following packet description in tcpdump program?</u>	<u>19.1.2.3:21 &gt; 10.1.1.1:5391 Flags [SYN,ACK], seq 98765, ack 12345 It is the second packet of a connection to a FTP server</u>	
<u>Mark true statement about link-state routing protocols.</u>	<u>OSPF(Open shortest path first) is an example of link-state protocol</u>	
<u>Which statement about IP address types is true?</u>	<u>A unicast address is a unique address assigned for a host network interface</u>	
<u>What information is usually dynamically chosen by a client connecting to a server?</u>	<u>source port TCP SEQ number</u>	
<u>Mark true statement about autonomous systems (AS)?</u>	<u>AS is a group of networks acting in external routing protocols under one identifier(2B or 4B number of AS)</u>	
<u>The notebook in the picture sent out an HTTP request, which reached the server.</u> <u>Which statement about ARP cache contents on a notebook, switch, router and server is true?</u>	<p><u>The server ARP cache contains address MAC5, the router one contains MAC1 and MAC6</u></p>	

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<u>How will the source and destination IP and MAC addresses of a packet sent from a notebook to a server look like on the route between routers A and B?</u>	<p>Source IP: notebook, source MAC: router A, destination MAC: router B, dest, IP: server</p>	
<u>Which statement about the media used in computer networking is correct?</u>	<p>In wireless transmission data is encoded by modulation of the carrier wave(amplitude, frequency or phase)</p>	
<u>User moved a host to another subnet within the network without VLSM (Variable Length Subnet Mask) and Proxy ARP. Which of the following will certainly have to be changed?</u>	<p>default router</p>	
<u>Which statement about ARP is true?</u>	<p>The ARP is used for conversion between network and physical addresses(not necessarily only IP and Ethernet)</p>	
<u>Choose correct statement about router functions.</u>	<p>Router on the border of local network may be configured so that certain type of traffic denied to deliver and it drops such packets(Firewall) For the proper function, a router in an Ethernet network usually has to refresh Mac addresses of next hop router over a period of time by means of Arp protocol</p>	
<u>How does DHCP protocol work?</u>	<p>Client sends a DHCP request to find out the parameters of his connection to IP network. To do so he uses a broadcast address, so the request is delivered to all hosts. The address lease time is limited. During this period the client has to ask for assignment confirmation. If he fails to get it he has to release the address when the lease expires. DHCP offers client addresses for a specific lease-time</p>	
<u>In what manner is textual representation of integers handled in TCP/IP application protocols?</u>	<p>you can look at the data sent by both sides in a text editor, e.g. integer values are sent in their text interpretation</p>	
<u>In what manner is binary representation of integers handled in TCP/IP application protocols?</u>	<p>the data is structured as a stream of blocks, bytes or even bits, so to understand it you must use a piece of software that converts it into a textual form, e.g. integer values are sent as a sequence of bits representing the value</p>	
<u>Which of the following protocols does not work with IP addresses?</u>	<p>Ethernet WIFI TCP UDP</p>	
<u>Which of the IP filtering characteristics is correct?</u>	<p>For acceptable functioning of some multiple-channel protocols together with IP filtering, the filtering process must use some information retrieved from the application layer. IP filtering serves to protect a local network; it works well for single channel protocols (HTTP) using it for multiple channel protocols (FTP, SIP) more complicated. A router with IP filtering serves to separate traffic between networks with different security requirements</p>	
<u>What addresses does a hub, switch, or router work with?</u>	<p>A router has its own IP addresses, but they do not occur in forwarded packets</p>	
<u>Which entry might be a valid row in the routing table of router A from the following figure?</u>	<p>destination 10.4.04.4/30 gateway 10.1.2.2</p>	
<u>What happens if the destination is not found in the routing table?</u>	<p>If a default gateway exists, this path is used</p>	

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<u>What steps does the client have to do for correct sending out a packet in case the destination server is not in the same network?</u>	The client computer chooses proper router. If the router is connected over the Ethernet, the sender has also to discover the router's physical address by ARP means	
<u>What TCP description is correct?</u>	TCP allows multiplexing - running an application using various network layer protocols	
<u>Nodes A, B, C and D are connected to a switch. Node A is transmitting a frame to node D, when node B needs to transmit data to node C. What does node B need to do?</u>	switches do not interfere with the frame content	
<u>What way is clock synchronization of computers in a network performed?</u>	In local network there may be one or more NTP servers that respond to client requests	
<u>Which statement about WiFi is correct?</u>	The term WiFi is a name for a group of IEEE 802.11 standards for wireless communication wifi protocols use CSMA/CA method with frame delivery confirmation	
<u>Mark the term, which is not a network layer function.</u>	modulation switching	
<u>Which IPv4 address has all ones in the host part?</u>	Broadcast	
<u>Which step follows after the web server prepares text of a page, divides it into pieces and forms TCP segments?</u>	Server creates ip packets from tcp segments, adding the ip header containing (among others) the source and destination ip address to all of them	
<u>Which statement about routing si true?</u>	If there are multiple matches in the routing table, the most specific one(the one with longest mask) is chosen	
<u>Which way do clients usually use to submit data filled out by users into dialogue/form widgets (controls) to servers?</u>	By means of URI parameters	
<u>Which statement about cables for interconnection of two nodes of Ethernet network is true?</u>	If we use cards without MDI/MDIX autodetection, we use a crossover cable to connect a computer to a router	
<u>Which of the proxy server characteristics is correct?</u>	Non-transparent proxy server may only be used for protocols that have support for this, because the info about the real target has to be carried within the protocol Local network clients can be forced to use proxy server without changing their configuration	
<u>How does message sender find out which part of the destination IP address pertains to the network and which to the host?</u>	If the destination address does not belong to any of the directly connected networks, this information is not needed	

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<u>What does the term LLC (Logical Link Control) describe?</u>	LLC provides multiplexing in OSI 2	
<u>Which application protocol is used for file system sharing?</u>	Network File System (NFS)	
<u>What does the acronym STP stand for?</u>	The Spanning Tree Protocol (STP) is a network protocol that builds a loop-free logical topology for Ethernet networks. <u>The shielded twisted pair - amore reliable alternative option of utp cable</u>	
<u>Which application protocol is used for file transmission?</u>	FTP	
<u>What information can we find in both TCP and UDP header?</u>	In the UDP header: multiplexing information, i.e. a source and destination port, and control information (length and checksum) are transmitted. In TCP header: Sequence number(an id), Acknowledgement number(confirm delivery), Flags, Urgent pointer(commands executed immediately) <b>Source Port, Destination Port, Checksum</b>	
<u>Which protocol provides reliable data transfer service on the network layer?</u>	TCP, SCTP They return a value that indicates whether the data was delivered successfully or not	
<u>Which protocol provides unreliable data transfer service on the network layer?</u>	UDP function returns only the result of <b>sending, not delivering</b> data "succeeded to send" or "failed to send". IPV6	
<u>What procedures does TCP use to ensure data transfer reliability?</u>	It provides <b>reliable</b> packet delivery, so the application only calls a function "send data block to destination" and waits. TCP handles segmentation of data to smaller blocks, sending them in packets, acknowledging their successful delivery, retransmitting them in case of failure and finally it returns control to the application, resulting in a success or failure. <b>TCP overhead (acknowledging delivery, waiting for acknowledgements, forwarding lost data)</b> reduces logical transmission capacity and can cause fluctuations in delivery frequency <u>The recipient may choose whether he sens teh confirmation as a separate packer with no data or by addition the ack flag to the next data packet</u>	
<u>Mark the incorrectly classified IP.address (on condition that default network masks have been used).</u>		
<u>How many and how large subnets are required to cover a network with the following needs for number of connected hosts when using VLSM (Variable Length Subnet Mask)?</u>		
<u>How many times does a CRC calculation (for Frame Check Sequence) run during transmission of a message between end devices in the figure?</u>		
<u>Untitled</u>		
<u>What TCP description is not correct?</u>	When tcp is used the ip layer delivers packets reliably	

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<u>Choose correct statement about the purpose or usage of IP header field TTL (Time To Live).</u>	The TTL field is also used by the traceroute program when diagnosing routing problems	---
<u>Untitled</u>		
<u>Which of the following statements correctly describes the function of particular application protocol?</u>	SIP mediates dialog creation in VoIP	---
<u>What is the primary function of CSMA/CD?</u>	Defines the algorithm to which a station is to proceed when transmitting data Resolves the problems of stations concurrent access to the medium	---
<u>Mark true statement about link-state routing protocols.</u>	<u>Every node(router) itself calculates the entire network map so it can react to topology changes more promptly</u>	
<u>Untitled</u>		
<u>Which data transfer parameter determines what data range a station may send without waiting for confirmation</u>	window size	
<u>Which statement about VLAN is true</u>	For the use of VLAN all intermediary nodes have to be able to handle frames exceeding maximum size, or maximum frame size for a network has to be reduced Individual VLANs are identified by a 12 bit number	
<u>How many bits are there in IPv6 address</u>	128	
<u>Make untrue statement about IP address assignment</u>	If a network uses private addresses, the computer decides itself which address to use	
<u>Which of the following does not belong among transmission quantities</u>	request for comments	
<u>On what principle is used for electronic signing of a document</u>		
<u>which functions provided by ICMP</u>	by means of ICMP destination availability may be detected by ping program	
<u>Which statement about the routing table management is true</u>	Dynamic management of routing table results in higher router CPU load	
<u>difference between single mode and multi mode optical fibre</u>	single-mode cable enables for light signal emitting larger range and higher bandwidth	
<u>which command can we list the contents of a routing table</u>	netstat	
<u>link-state protocols true</u>	calculation of network topology from info acquired by these protocols is complex so it is possible to divide the network into smaller segments	

Aa Question	≡ Answer	📎 Picture
<u>What negative consequence has wrong setting of the default router on a host?</u>	Host cannot forward packets to some networks, it may receive them	
<u>Which statement about network topology is true</u>	Deterministic access is commonly used in ring topology; a station is allowed to transmit only if it holds a permission in given moment	