***Quiz 1***

***1. Which of the following application-layer protocols runs on top of UDP?*** RIP, **DHCP**, SMTP, FTP | ***2. Which of the following statements is NOT true about the layered architecture in Computer Networking?*** Computer Networking is a simple and small system (F); The remainder of the Computer Networking system remains unchanged when a layer's implementation is modified (T); It makes much easier to change implementation of service provided at each layer (T); It allows us to better understand a large and complex system of Computer Networking (T) | ***3. Which of the following Wireshark features is to recover a file for captured FTP data packets?*** Follow Stream | ***4. Wireshark is a packet sniffer that can be used to capture and analyze network packets.*** True | ***5. Which of the following is the correct display filter that shows all TCP traffic running on port 80 on Wireshark?*** tcp and tcp.port == 80 | ***6. Which of the following is the correct display filter that shows everything but excludes FTP traffic on Wireshark?*** not ftp | ***7. Which of the following is the correct display filter that shows all Web traffic on Wireshark?*** http or https | ***8. You can use the Wireshark feature under which of the following menu items to recover a file for captured FTP data packets?*** Statistics -> conversations | ***9. TCP services are more efficient than UDP services.*** False | **10. *Which of the following application-layer protocols is on top of UDP?*** SNMP

***Quiz 2***

***1. What command is used to lookup DNS information in both Windows and Linux?***nslookup | ***2. The following are all correct default port numbers of corresponding protocols*** *HTTP: 80, FTP: 20/2, SSH: 25, Telnet: 24, E-mail: 22, HTTPS: 440:* False | ***3. The following are reasons why there is a need for UDP in computer networks EXCEPT FOR:***Some network services only work in a LAN and the chance of packet loss is small (T); UDP services are less efficient than TCP services (F); Some network services only work in a LAN and congestion control is not needed (T); UDP services are more efficient than TCP services (T) | ***4. How does a Web server know whether a client is new or returned?*** uses information in cookies contained the request message | ***5. Which of the following request methods is NOT available in HTTP 1.0?***PUT | ***6. In the header of an HTTP request message, what is the purpose to have several lines of Accept Headers?***gives the browser a chance to tell the Web server what format it wants for resources | ***7. Which of the following statements is TRUE about the HTTP response status code "505  HTTP Version Not Supported"?***It is a fatal error *|* ***8. Reservations are immediate and do not require the DHCP lease process to be restarted****.* False | ***9. The following are fields in a UDP header EXCEPT FOR****:* Checksum, Destination port, Packet type, Source port | ***10. Which of the following is NOT TRUE about DNS?*** A domain resource record is a five-tuple (T); A typical DNS database table has six columns (F); The Internet is divided into over 250 top-level domains (T); The primary function of DNS is to map domain names onto resource records (T)

***Quiz 3***

***1. Which of the following is an interface of data communication between the Transport layer (layer 4) and the App layer (layer 5)?*** TSAP, DSAP, NSAP, ASAP | ***2. Which of the following app-layer protocol uses the standard port 443 by default?*** HTTPS | ***3. Which of the following statements is TRUE about TCP connection release?*** Both ends of a TCP connection can always release the connection if the server can receive at least one DR (Disconnect Request) sent from the client, with the help of timers and retransmission (T); A DR (Disconnect Request) should be initiated by the server host (F); Both ends of a TCP connection can always release the connection even if all the DRs (Disconnect Requests) are lost, with the help of timers and retransmission (F); Both ends of a TCP connection can always release the connection even if every DR (Disconnect Request) sent from the client is lost, with the help of timers and retransmission (F) | ***4. \_\_\_\_\_\_\_\_\_\_ allows the sender to send multiple frames before needing the acknowledgements****.* Sliding window | ***5. What is the minimum size of a UDP segment?*** 8 bytes | ***6. What is the minimum size of a TCP segment?*** 20 bytes | ***7. What is the maximum length of an IP packet?*** 65,535 bytes **| *8. What is the size of an IP pseudo-header for IPv4?*** 12 bytes **| *9. Which of the following application-layer protocols always uses UDP services at the transport layer?***DNS, DHCP, SSH, FTP | ***10. Which of the following app-layer protocols runs on top of TCP?*** DHCP, POP-3, RTP, SNMP **| *11. The maximum size of an IP packet is 65,535 bytes. Since 65,535 − 20 (TCP header) − 20 (IP header) = 65,495, it means that we can always push 65,495 bytes of data into a TCP segment.*** False | ***12. Which of the following flags is TRUE if a TCP segment carries some data?*** FIN, SYN, PSH, ACK | ***13. A TCP segment with the flags SYN = 1 and ACK = 1*:** can ONLY be sent from a server host to a client host | ***14. Which of the following flags in the TCP header is used for congestion control?*** CWR | ***15. Which of the following transport service primitives is ONLY called at the server side?*** DISCONNECT, LISTEN, RECEIVE, SEND | ***16. Which of the following transport service primitives is ONLY called at the client side?*** DISCONNECT, SEND, RECEIVE CONNECT | ***17. For an application with a server and several remote clients calling transport service primitives, a client first executes a CONNECT primitive, and then the server executes a LISTEN primitive.*** False | ***18. After a socket is created, it should be bound to a local address (HOST, PORT) before it can listen to incoming connection requests.*** True | ***19. How an application at layer 5 uses the services at layer 4 in the TCP/IP model?*** through a transport address which is a port number | ***20. A TCP segment with the flags SYN = 1 and ACK = 0:*** is a request message sent from the client

***Quiz 4***

***1. Which of the following statements is NOT true about NAT?***NAT solves the problem of IPv4 address exhaustion (T); NAT box maps a public IP address to many private IP addresses of local hosts (T); NAT allows many internal hosts to share a single public IP address to access the Internet (T); NAT solves the problem of IPv6 address exhaustion (F) | ***2. IP address hierarchical design can benefit CIDR routing.*** True | ***3. Given the IP address 168.10.31.0/24. Its host address length is:*** 8 ***| 4. Given the IP address 216.170.131.0/24. Its network-prefix length is:*** 24 | *5. The TTL field of the IP header is a counter that is used to count the number of hops. When it hits zero, the packet is discarded by the router and the sender is notified.* True | ***6. Total length field of the IP header refers to the length of the data payload carried in the packet.*** False | ***7. The maximum size of the IP header is 60 bytes.*** True | ***8. What type of ICMP message will be sent to the sender of a packet when the value of its TTL field becomes 0?*** Time exceeded | ***9. Which layer of the TCP/IP model is the ICMP protocol implemented?*** Network layer | ***10. Which of the following protocols allows a computer in a coffee shop to access the Internet automatically?*** ICMP, ARP, DHCP, TCP *|* ***11. Which of the following is a requirement of the IP protocol design?*** Strict sending, tolerant receiving | ***12. Why is a TTL field required in the IP header?*** The time-to-live value instructs a router on the Internet when a packet should be discarded. | ***13. A packet is stored at a router until it has fully arrived. How does the router know that a packet has fully arrived?*** The router need all the above information contained in the three fields of the packet's IP header | ***14. Below is a screenshot of the PPT slide in Chapter 5 (Network Layer) to illustrate how NAT works. Based on this slide, the Web browser running on the local host with IP address 10.0.0.1 is associated with the port number:*** 3345 | ***15. The following are the flaws of the IP protocol EXCEPT FOR:*** Lack of mechanisms for flow control

A diagram of a network

AI-generated content may be incorrect. A diagram of a computer network

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***Quiz 5***

**1. Hub, switch and router are all layer-2 devices.** False | **2. A switch is intelligent and able to learn the Mac addresses of the network devices connecting to it.** True

**3. A router is a layer 3 device that is able to learn the IP address of a packet.** True | **4. Which of the following is NOT TRUE about a layer-2 switch?** It connects two LANs and makes it a single LAN (T); It operates at layer 2 (T); It connects two different networks as a gateway (F); It is intelligent to learn the Mac addresses of the computers connected to it (T) | **5. Which of the following statements is NOT true about layer-2 switches?** Switches are plug-and-play devices (T); Switches have to process frames only up through layer 2 (T); A network administrator has to configure the switch table at the time of switch installation or when a host is removed from the LAN (F); Switches are full-duplex devices (T) | **6. A switch table is built automatically, dynamically, and autonomously.** True | **7. For each incoming frame received on an interface of a switch, which of the following is NOT stored in the switch table?** the interface from which the frame arrived; the current system time of the switch; the frame's destination MAC address; the frame's source MAC address | **8. Which of the following is NOT true about a switch table?** It is initially empty before the switch is connected with any host in the LAN (T); If a PC is replaced by another PC (with a different adapter), the MAC address of the original PC will be purged from the switch table (T); If every host connected to a switch in the LAN eventually sends a frame, then every host will eventually get recorded in the switch table (T); The MAC address of a host is kept in the switch table even if no frames are received from that host for a long period of time (F) | **9. The forwarding function of a switch determines whether a frame should be forwarded (to some interface) or dropped.** False

**10. Which of the following statements is NOT true about the data payload field of an Ethernet Frame?** The maximum transmission unit (MTU) of Ethernet is 1,500 bytes (T); If it exceeds 1,500 bytes, then the packet will be fragmented (T); An ethernet frame carries the whole IP packet including its header (T); The data payload field of an Ethernet Frame could be empty without any carried data (F) | **11. The CRC field of an Ethernet frame (in its trailer) is used by the sending host to send the generator polynomial to the receiving host.** False

**12. Which of the following statements is NOT true about the 8-byte Preamble field of an Ethernet frame?** The 8th byte of the preamble field indicates the beginning of the Ethernet frame (T); The 8th byte of the preamble field is the first field of an Ethernet frame (T); The values of the first 7 bytes of the preamble could be different (F); The first 7 bytes of the preamble have the same value and serve to synchronize their clocks to the sender's clock (T) | **13. Ethernet LANs with a hub-based star topology are still popular and widely used in today's computer networks.** False

**14. Which of the following is NOT true about layer-2 switches?** A switch operate at layer 2 (T); A switch can learn the MAC addresses of the devices connected to it (T); A switch forwards link-layer frames to the next node (T); A switch can recognize IP addresses of packets (F) | **15. Which of the following statements is NOT true about ARP?** The receiving host has to determine the MAC address of the frame's source host at layer 2 by running ARP (F); It is a layer 2 protocol (T); The sending host has to determine the MAC address of the frame's destination host at layer 2 by running ARP (T); It provides a mapping between IP addresses and MAC addresses (T) | **16. Which of the following functions is NOT implemented at Layer 2?** Sending messages between a client browser and a remote Web server (F); Sending a layer 2 frame over individual links (T); Encapsulating a layer 3 packet into a layer 2 frame (T); Running APR for mapping between IP addresses and MAC addresses (T)

**17. The Data  Payload of an Ethernet frame carries the IP packet with its header.** True | **18. The CRC/FCS field of an Ethernet frame header is used by the receiver for error detection.** True

**19. The Preamble field of an Ethernet frame header uses.** 8 bytes | **20. Which of the following is NOT true about the SFD (Start of Frame Delimiter) in an Ethernet frame header?** SFD was designed to break the bit pattern of the preamble and signal the start of the actual frame (T); SFD (Start of Frame Delimiter) is the 8th byte of the preamble (T); SFD is used by a receiver for error detection (F); SFD indicates the beginning of the Ethernet frame (T);