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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question. 2 points for each question.

- 1) At 10 meters, a signal has a strength of 100 mW. About how strong will it be at 40 meters?
A) about 0.5 mW B) about 25 mW C) about 5 mW D) about 6 mW

1) D

- 2) What happens if two nearby access points use the same channel?
A) They will interfere with each other.
B) They will be bonded for joint operation automatically if they are on the same ESS.
C) They will be bonded for joint operation automatically.
D) They will be bonded for joint operation automatically if they have the same SSID.

2) A

- 3) An access point can transmit to more than one wireless client at a time with _____.
A) CSM/CAC+ACK
B) bonding
C) MIMO
D) Multiuser MIMO

3) D

- 4) Passive RFID chips are powered by _____.
A) the sun
B) body temperature
C) the scanning unit
D) a battery

4) C

- 5) Which of the following secures communication between the wireless computer and the server it wishes to use against evil twin attacks?
A) VLANs
B) 802.1X mode
C) VPNs
D) PEAP

5) C

- 6) Near-field communication has a maximum transmission distance of about _____.
A) 400 cm/200 in
B) 4 cm/2 in
C) 40 cm/20 in
D) The devices must be physically touching.

6) B

- 7) In the IPv4 address 1.2.3.4, what is the network part?
A) 1.2
B) 1.2.3
C) 1
D) It is hard to say with limited information.

7) D

- 8) If I simplify the address 2001:0000:0000:00fe:0000:0000:abcd:13ef, I get _____.
A) 2001::fe::abcd:13ef
B) 2001:fe::abcd:13ef
C) 2001::fe::abcd:13ef
D) 2001::fe::abcd:13ef

8) A

- 9) For 100,000 addresses, which will have fewer rows?
A) a routing table
B) an Ethernet switching table
C) Both will be about the same length.

9) B

- 10) Your firm has an 8-bit network part. If you need at least 250 subnets, what must your subnet part size be?
A) 6
B) 7
C) 5
D) 8

10) D

$$2^4 = 16$$

$$2^7 = 128$$

$$2^6 = 64$$

11) Today, it can be problematic to have only a single IPv6 stack because _____.

- A) a dual stack has become a common solution
- B) a single IPv4 stack is out of date
- C) a single IPv6 stack could not communicate with a single IPv4 stack
- D) all of the above

11) C

12) The main disadvantage of transport mode protection compared to tunnel mode protection in IP is _____.

- A) that it provides protection over only part of the route
- B) higher cost
- C) both A and B
- D) neither A nor B

12) B

13) LAN speeds are faster than WAN speeds. This is because of _____.

- A) slow corporate adoption of newer WAN technologies
- B) regulatory limitations
- C) technological limitations
- D) economic reasons

13) D

14) Which of the following is a common use for carrier WANs?

- A) to connect a corporate site to the Internet
- B) to connect corporate sites
- C) both A and B
- D) neither A nor B

14) C

15) SDN can _____.

- A) reduces router costs
- B) permit routing rules to be changed rapidly
- C) both A and B
- D) neither A nor B

15) C

16) In Carrier Ethernet, which service is a competitor for leased line service?

- A) E-LAN
- B) E-Line
- C) both A and B
- D) neither A nor B

16) B

17) The advance that made the client/server application architecture possible was _____.

- A) application sophistication
- B) the Internet
- C) client processing power
- D) input/output methods

17) B

18) A media gateway translates _____ transmissions.

- A) transport
- B) signaling
- C) both A and B
- D) neither A nor B

18) B

19) For the transport layer, VoIP uses _____ for transport transmission.

- A) UDP
- B) SIP
- C) TCP
- D) IP

19) A

20) Which of the following is a security risk associated with BitTorrent?

- A) danger that an employee may download an infected file that cannot be rejected by filtering
- B) danger caused by opening ports on the firewall
- C) both A and B
- D) neither A nor B

20) A

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question. 3 points for each question.

- 21) What is the benefit of spread spectrum transmission for business communication? 21) _____
- 22) When does RTS/CTS make sense to use? 22) _____
- 23) Why does transmission speed drop as a computer moves farther from an access point? 23) _____
- 24) Can a Bluetooth slave have two masters? Why? 24) _____
- 25) Why does 802.1X mode in 802.11i need security between the authenticator and the host before 802.1X authentication? 25) _____
- 26) Why does a network's strength depend on the least secure access point? 26) _____
- 27) If a subnet mask contains 24 ones (/24) how many hosts can each subnet support? 27) _____
- 28) Why is decision caching for router dangerous? 28) _____
- 29) Why can UDP not handle long application messages? 29) _____
- 30) Assume that an average SNMP response message is 100 bytes long. Assume that a manager sends 500 SNMP Get commands each second. What percentage of a 100 Mbps LAN link's capacity would the resulting response traffic represent? 30) _____
- 31) How does Network Address Translation (NAT) allow a firm to deal with a shortage of IP addresses given to it by its Internet Service Provider (ISP)? 31) _____
- 32) Why would some firms still opt for SSL/TLS? 32) _____
- 33) Does residential Digital Subscriber Line (DSL) offer simultaneous voice and data service? 33) _____
- 34) Why does cellular telephony use cells? 34) _____
- 35) Is it possible to implement Multiprotocol Label Switching (MPLS) across the entire Internet? Explain. 35) _____
- 36) From where does a Software Defined Networking (SDN) switch or SDN router get its forwarding table rules? 36) _____
- 37) What do you think are the advantages of a Web-enabled e-mail system? 37) _____

- 38) If an e-mail sender uses SSL/TLS when it sends an e-mail, which is protection limited? 38) _____
- 39) Should the use of facilitating servers prevent an application from being considered peer-to-peer? 39) _____
- 40) Under what circumstances would you use an omnidirectional antenna? 40) _____