Q01: A wireless node that is in active scanning mode transmits what special type of frame in order to find available access points? (Datalink layer wireless)
1. ping frame
2. probe frame
3. association request
4. beacon frame

Q02: What special signal is issued periodically from an AP and contains the network transmission rate and service set identifier (SSID), as well as other information needed for a computer to associate with the AP? (Datalink layer wireless)
1. alert message
2. broadcast frame
3. beacon frame
4. announcement packet

Q03: Which Carrier Sense technology is used on wireless networks to reduce collisions? (Datalink layer wireless)
1. 802.11
2. CSMA/CD
3. SSID
4. CSMA/CA

Q04: When your computer wants to send data across Wi-Fi,. what is the first thing it must do?(Datalink layer wireless)
1. Just start sending the data
2. Send a message to the gateway asking for permission to transmit
3. Listen to see if other computers are sending data
4. Wait until informed that it is your turn to transmit

Q05: At what layer of the OSI model do the 802.11 standards vary? (Datalink layer wireless)
1.Physical layer
2.Transport layer
3.Data link layer
4.Network layer

Q06: All wireless signals are carried through the air by electromagnetic radiation? (Datalink layer wireless)
True
False

Q07: In IEEE terminology, a group of stations that share an access point are said to be part of which of the following?(Datalink layer wireless)
1. extended service set
2. generic service set

3. basic service set
4. modified service set

Q08: You are using Packet Tracer Wireless Router. (Datalink layer wireless)

You would like to exclude a specif device from connecting to your network.

Select the appropriate method to make this exclusion.

1. Enable Wireless MAC filter on 5GHZ port and introduce, in the filter list, the MAC address of the device to exclude
2. Enable Wireless MAC filter on all wireless ports and introduce, in the filter list, the MAC address of the device to exclude
3. Enable Wireless IP filter on all wireless ports and introduce, in the filter list, the IP address of the device to exclude
4. Enable Wireless MAC filter on 2.4GHZ port and introduce, in the filter list, the MAC address of the device to exclude
5. Configure a SSID and disable its broadcasting

Q09: The 802.11 standard specifies the use of what technique in order to minimize the potential for collisions? (Datalink layer wireless)

1. Carrier Sense Single Access with Collision Adaptation (CSSA/CA)
2. Carrier Sense Multiple Access with Collision Mitigation (CMSA/CM)
3. Carrier Sense Multiple Access with Collision Detection (CSMA/CD)
4. Carrier Sense Multiple Access with Collision Avoidance (CSMA/CA)

Q10: How many MAC addresses are in a IEEE 802.11 frame? (Datalink layer wireless)

1. 6
2. 4
3. 2
4. 3

Q11: Which of the following statement are true about the 802.11 (WiFi) MAC protocol? (Datalink layer wireless)

1. The 802.11 MAC protocol performs collision detection. That is, an 802.11 sender will listen to the channel while it is transmitting, and stop transmitting when it detects a colliding transmission from another node.
2. The 802.11 MAC protocol performs carrier sensing. That is, it listens before transmitting and will only transmit if the channel is sensed idle
3. The 802.11 MAC protocol performs collision avoidance. That is, an 802.11 sender and receiver can use approaches such as RTS/CTS, inter-frame spacing, and explicit acknowledgments to try avoid, rather than detect, colliding transmissions from another node.

Q12: When using a WIFI network to talk to the internet, where does your computer send its packets? (Datalink layer wireless)
1. A cell phone tower
2. A satellite
3. The internet central office
4. A gateway

Q13: How is the link/physical address for a WLAN device assigned? (Datalink layer wireless)
1. By the cell tower
2. By the government
3. By the manufacturer of the link equipment
4. By the Internet Assignment Numbers Authority (IANA)

Q14: What does a WiFi-connected workstation do when it tries to send data and senses the channel is busy? (Datalink layer wireless)
1. Immediately start transmitting the message
2. Wait until told by the gateway that the channel is idle
3. Sends the message so part of the message makes it through
4. Wait a random amount of time before starting transmission if the channel remains idle for a specified interval of time

Q15: What method is used to manage contention-based access on a wireless network?
1. CSMA/CA
2. Token passing
3. CSMA/CD
4. Priority ordering

Q16: What is the purpose of a beacon frame in WiFi (802.11) networks?
1. A beacon frame allows a mobile device to signal that it is ready to receive a frame.
2. A beacon frame allows an access point to advertise its existence, and the frequency channel it is operating on, to devices that want to connect to an access point.
3. A beacon frame allows a node with a directional antenna to aim the antenna towards the beacon point to maximize the quality of the send and receive signal.
4. A beacon frame allows a mobile node to determine the direction in which it should move in order to obtain an increasing signal strength.

Q17: Why are link-layer ACKs used in WiFi (802.11) networks? [Hint: check two of the boxes below].
1. Wireless links are noisier than wired links, and so bit level errors are more likely to occur, making link-layer error recovery more valuable that in less-noisy wired links.
2. Hearing a receiver ACK, all other stations will stop transmitting. This reduces collisions.

3. Because of the hidden terminal problem, a node that is transmitting and hears no collisions still doesn't know if there was a collision at the receiver.
4. The sender can use the differences in the signal strength in an ACK to infer whether the receiver is moving towards, or away from, the sender

Q18: What is the purpose of RTS (request to send) and CTS (clear to send) frames in WiFi (802.11) networks?
Select one or more of the answers below. [Hint: check two answers below].

1. A CTS allows a receiver to let the sender (who sent that RTS) know that it (the receiver) has enough buffers to hold a frame transmitted by that sender
2. RTC/CTS frames allow a sender to gather CTS frames from all other network nodes, so that it knows it can then send without collisions.
3. A CTS that is sent allows a receiver to force other nodes (other than the intended sender who sent the RTS) to refrain from transmitting, thus allowing the sender who sent the RTS to then transmit a frame with less likelihood of a collision.
4. RTC/CTS frames helps nodes in a wireless network mitigate the effects of the hidden terminal problem.

Q19: Which of the following statements about the characteristics of wireless links are true?

1. Multipath propagation occurs when portions of the electromagnetic wave reflect off objects and the ground taking paths of different lengths between the sender and a receiver, and thus arriving at the receiver at slightly different points in time.
2. Multipath propagation occurs when a sender sends multiple copies of a frame to a receiver, which is relayed over different by base stations or other wireless devices to the receiver.
3. Path loss refers to the decrease in the strength of a radio signal as it propagates through space.
4. Path loss refers to the dropping of link-layer frames that are being relayed among wireless access points due to buffer overflow, just as network-layer datagrams are dropped at routers with full buffers.

Q20: Which of the following statements about the characteristics of wireless links are true?

1. The "hidden terminal problem" happens when A sends to B over a wireless channel, and an observer, C (that can be even closer to A than B), does not detect/receive A's transmission because of physical obstacles in the path between A and B.
2. The "hidden terminal problem" happens when A sends to B over a wireless channel, and an observer, C (that is further away from A than B), does not detect/receive A's transmission because the signal strength of A's transmission has faded significantly by the time it reaches C.
3. The "hidden terminal problem" happens when A sends to B over a wireless channel, and an observer, C (that can be even closer to A than B), does not detect/receive A's transmission because of physical obstacles in the path between A and C.
4. The "hidden terminal problem" refers to the fact that many people can never seem to find their mobile phones.