Cisco

Exam Questions 300-425

Designing Cisco Enterprise Wireless Networks (ENWLSD)

NEW QUESTION 1
An engineer has performed a predictive site survey for high-speed data and voice in an indoor office. What is the recommended data rate with -67 dBm signal level for optimal VoWLAN design?

A. 6 Mbps on 802.11 bgn
B. 24 Mbps on 802.11 bgn
C. 12 Mbps on 802.11 an
D. 24 Mbps on 802.11 an

Answer: B

Explanation:

The -67 dBm measurement has been used for years for 11b phone clients from many vendors. Tests indicate that this same rule of thumb measurement works well for 11g and 11a phone clients.

NEW QUESTION 2
What is the recommended cell overlap when designing a wireless network for Cisco Hyperlocation?

A. 20%
B. 30%
C. 40%
D. 50%

Answer: A

Explanation:

- 20% cell overlap for optimized roaming and location calculations

NEW QUESTION 3
A network engineer is working on a design for a wireless network that must support data, voice, and location services. To support these services, which access point placement must the engineer use?

A. corner only
B. perimeter and corner
C. perimeter only
D. indoor and outdoor

**Answer:** B

Explanation:

In a location-ready design, it is important to ensure that access points are not solely clustered in the interior and toward the center of floors. Rather, perimeter access points should complement access points located within floor interior areas. In addition, access points should be placed in each of the four corners of the floor, and at any other corners that are encountered along the floor perimeter. These perimeter access points play a vital role in ensuring good location fidelity within the areas they encircle, and in some cases may participate in the provisioning of general voice or data coverage as well.
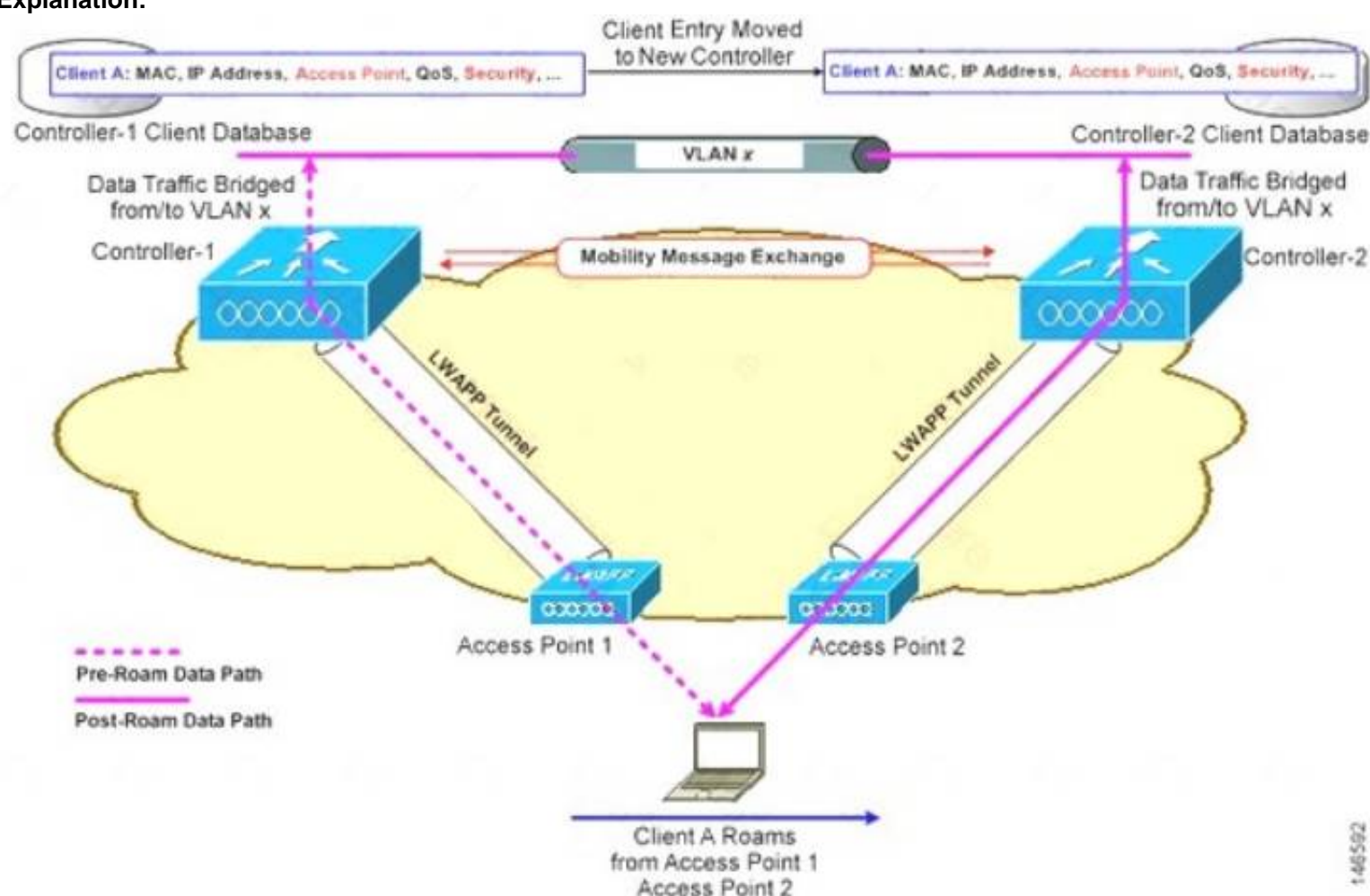
NEW QUESTION 4
Refer to the exhibit.
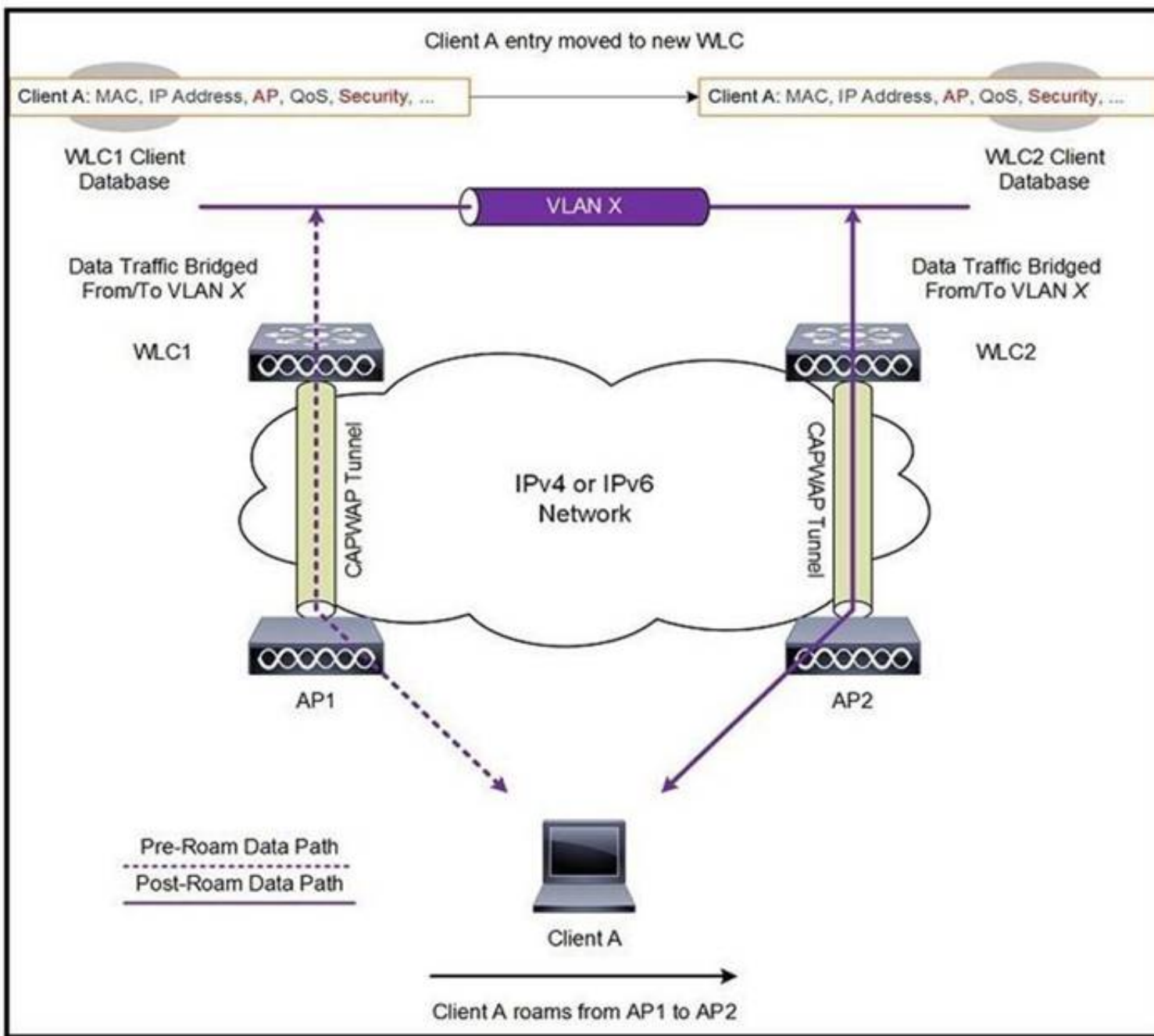
A client roams between two APs that are registered to two different controllers, where each controller has an interface in the client subnet. Both controllers are running AireOS. Which scenario explains the client roaming behavior?

A. Controllers exchange mobility control messages (over UDP port 16666) and the client database entry is moved from the original controller to the new controller.
B. Controllers do not exchange mobility control messages (over UDP port 16666) and the client database, entry is not moved from the original controller to the new controller.
C. Controllers exchange mobility control messages (over UDP port 16666) and a new client session is started with the new controller.
D. Controllers exchange mobility control messages (over UDP port 16666) and the client database entry is tunneled from the original controller to the new controller.
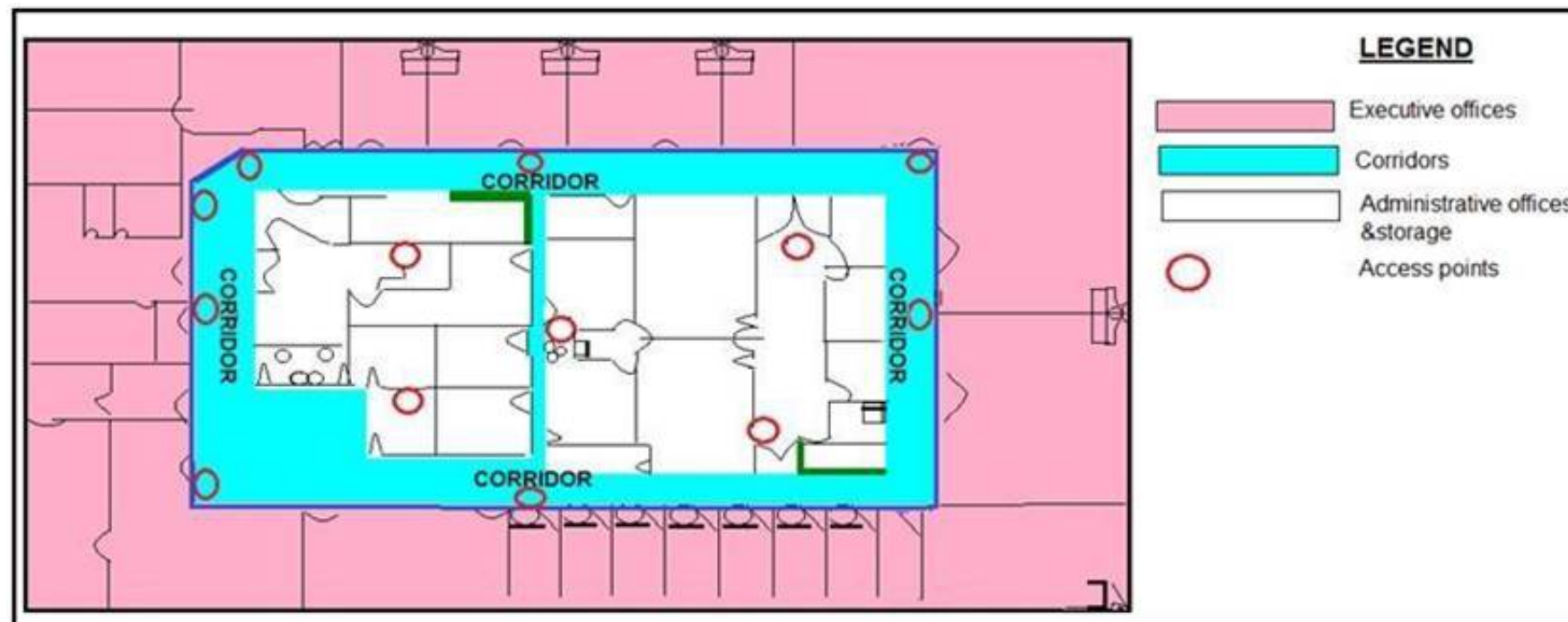
Answer: A

Explanation:

In this instance controllers exchange mobility control messages (over UDP port 16666) and the client database entry is **moved** from the original controller to the new controller.

NEW QUESTION 5
Refer to the exhibit.

What is the main reason why the Wi-Fi design engineer took a different approach than installing the APs in the offices, even though that installation provides better coverage?

A. aesthetics
B. transmit power considerations
C. antenna gain
D. power supply considerations

Answer: B

Explanation:
https://www.cisco.com/en/US/docs/solutions/Enterprise/Mobility/emob30dg/RFDesign.html#wp1000551

NEW QUESTION 6
When conducting a site survey for real-time traffic over wireless, which two design capabilities of smartphones and tablets must be considered? (Choose two.)

A. no support for 802.11ac
B. higher data rates than laptops
C. fewer antennas than laptops
D. no support for 802.11r
E. lower data rates than laptops

Answer: BE

Explanation:
Site surveys are one of the basic requirements when you deploy a WLAN, and you must always consider the Wi-Fi capabilities of the client devices or endpoints. Most smartphones and tablets support 802.11. However, generally, the smartphones and tablets have fewer antennas and lower data rates than laptops. In addition, most are not purpose-built for the enterprise WLAN market. Almost all smartphones and tablets support enterprise security policies. However, many of them do not support

NEW QUESTION 7
An engineer must ensure that the wireless network can accomplish fast secure roaming by way of caching keys on the access points. Which key caching mechanism is enabled by default on a Cisco AireOS WLC?

A. SKC
B. OKC
C. 802.11r
D. CCKM

Answer: B

Explanation:
Step 2   Enable sticky key caching by entering this command:

    config wlan security wpa wpa2 cache sticky enable *wlan_id*

    By default, SKC is disabled and opportunistic key caching (OKC) is enabled.

An extension of this technique is known as OKC (Opportunistic Key Caching), a method not defined in 802.11i but necessary to enable optimized roaming at layer 2 for client devices moving between APs. Using OKC, all APs on the same layer 2 network will receive a copy of a client's PMK ID, enabling client devices authenticated via 802.1X to authenticate with decreased latency whilst roaming. In this fashion, even if a client has not been

NEW QUESTION 8
A university is in the process of designing a wireless network in an auditorium that seats 500 students and supports student laptops. Which design methodology should the university implement in the auditorium?

A. roaming design model
B. voice design model
C. location design model
D. high-density design model

Answer: B

Explanation:
https://www.cisco.com/c/dam/en_us/solutions/industries/docs/education/cisco_wlan_design_guide.pdf

NEW QUESTION 9
An engineer is reducing the subnet size of the corporate WLAN by segmenting the VLAN into smaller subnets. Clients will be assigned a subnet by location. Which type of groups can the engineer use to map the smaller subnets to the corporate WLAN?

A. WLC port groups
B. RF groups
C. AP groups
D. interface groups

Answer: D

Explanation:

- AP groups give the ability to statically map Wi-Fi service (WLAN) to VLAN based on physical location.

- Users see the same Wi-Fi service on all sites.

- Admin can monitor and filter based on different IP@ each site

- Can also be used to have smaller Wi-Fi subnets

NEW QUESTION 10
An engineer has successfully configured high availability and SSO using two Cisco 5508 Wireless LAN Controllers. The engineer can access the Active Primary WLC, but the Secondary Standby WLC is not accessible. Which two methods allow access to the standby unit? (Choose two.)

A. via the console connection
B. SSH to the redundancy management interface of the primary WLC
C. SSH to the service port interface
D. SSH to the virtual interface of the secondary WLC
E. SSH to the management interface of the primary WLC

Answer: AC

Explanation:
Once SSO is enabled, the Standby WLC can be accessed via console connection or via SSH on the service port and on the redundant management interface.

NEW QUESTION 10
A wireless engineer is designing a wireless network for a warehouse using access points with internal antennas. Which two elements have a negative effect on the wireless users? (Choose two.)

A. wireless channels
B. access point height
C. client authentication
D. client authorization
E. absorption

Answer: BE

Explanation:
https://www.cisco.com/c/en/us/products/collateral/wireless/aironet-1250-series/design_guide_c07-693245.html#

NEW QUESTION 13
An enterprise is using two wireless controllers to support the wireless network. The data centre is located in the head office Each controller has a corporate WLAN configured with the
nameCopr-NET390595865WLC-1 and Copr-NET6837I638WLC-2. The APs are installed using a round-robin approach to load balance the traffic. What should be changed on the configuration to optimize roaming?

A. Move all access points to one controller and use the other as N+1 HA.
B. Use the same WLAN name for the corporate network on both controllers.
C. Use the same WLAN name for the corporate network on both controllers.
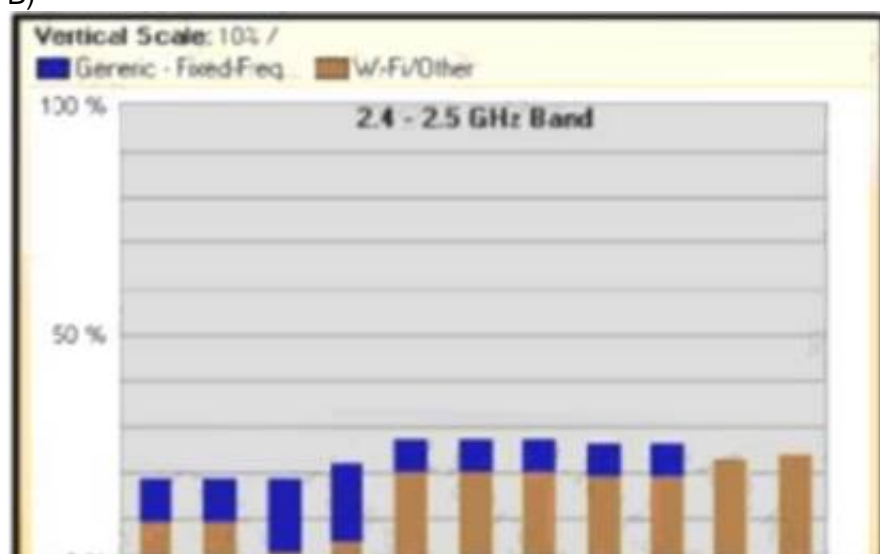D. Place the access points per floor on the same controller.

Answer: A

NEW QUESTION 16
An engineer as performing a Layer 1 passive wireless site survey utilizing a channel analyzer software in the 2.4 GHz spectrum. Which chart indicates the ratio of interference present during the duration of the capture?
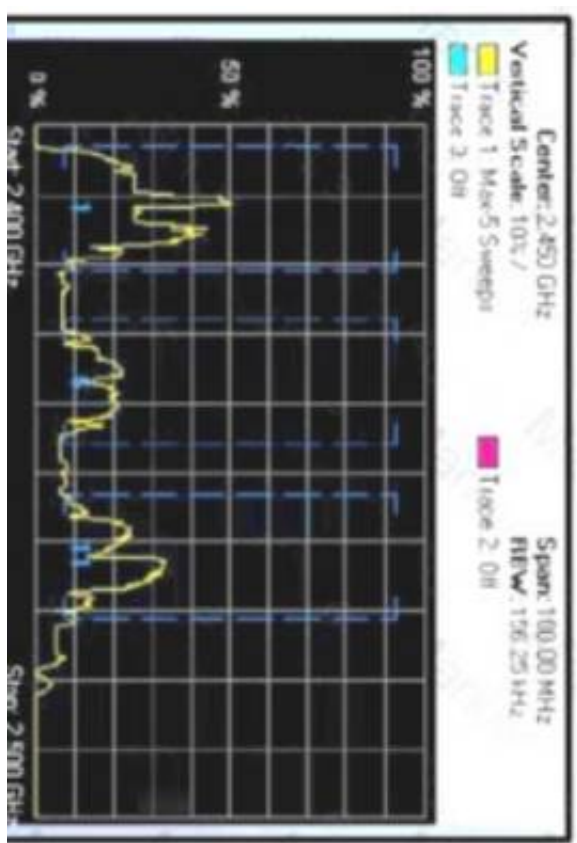A)
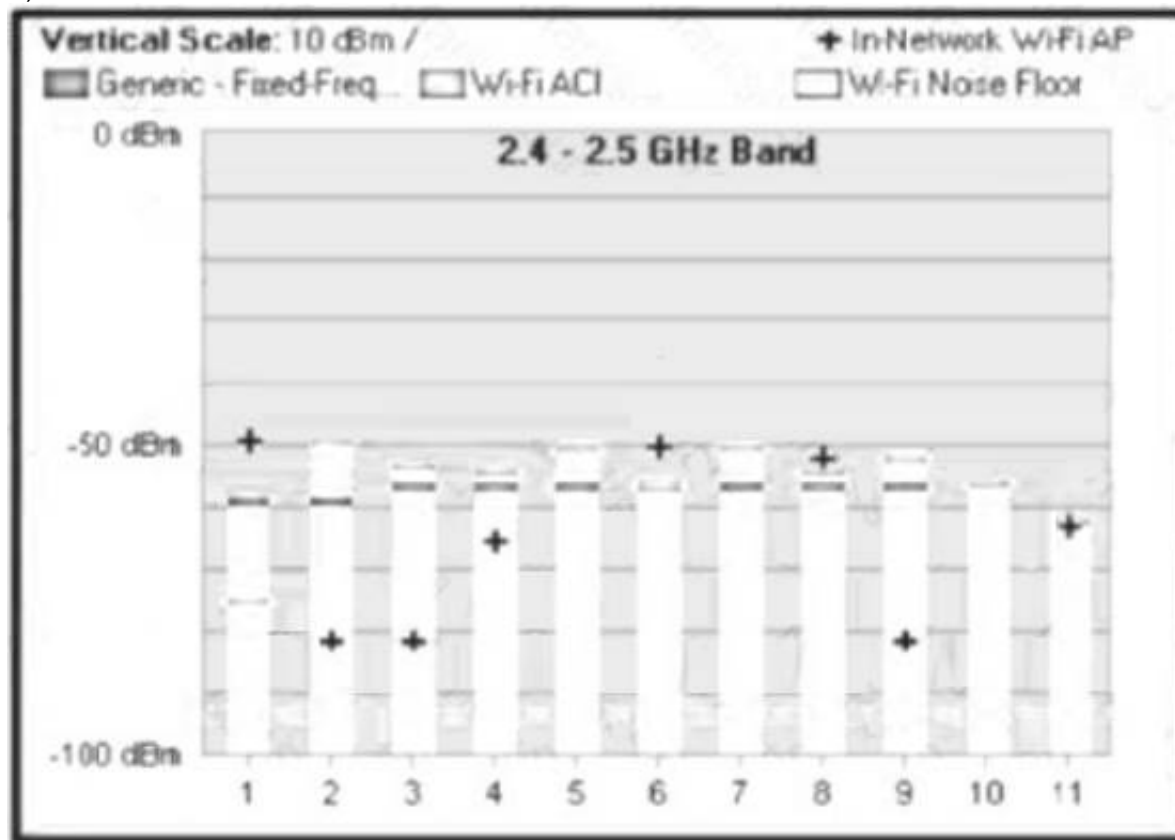
B)

C)

A. Option A
B. Option B
C. Option C
D. Option D

Answer: C

NEW QUESTION 20
What is the attenuation value of a human body on a wireless signal?

A. 3 dB
B. 4 dB
C. 6 dB
D. 12 dB

Answer: A

Explanation:
Signal AttenuationSignal attenuation or signal loss occurs even as the signal passes through air. The loss of signal strength is more pronounced as the signal passes through different objects. A transmit power of 20 mW is equivalent to 13 dBm. Therefore, if the transmitted power at the entry point of a plasterboard wall is at 13 dBm, the signal strength is reduced to 10 dBm when exiting that wall. This table shows the likely loss in signal strength caused by various types of objects.
Signal Attenuation Caused By Various Types of Objects Object in Signal Path
Signal Attenuation through Object
Plasterboard wall 3 dB
Glass wall with metal frame 6 dB
Cinder block wall 4 dB
Office window 3 dB
Metal door 6 dB
Metal door in brick wall 12 dB
Human body 3 dB
Each site surveyed has different levels of multipath distortion, signal loses, and signal noise. Hospitals are typically the most challenging environment to survey due to high multipath distortion, signal losses and signal noise. Hospitals take longer to survey, require a denser population of access points, and require higher performance standards. Manufacturing and shop floors are the next hardest to survey. These sites generally have metal siding and many metal objects on the floor, which result in reflected signals that recreate multipath distortion. Office buildings and hospitality sites generally have high signal attenuation but a lesser degree of multipath distortion.
https://www.cisco.com/c/en/us/support/docs/wireless-mobility/wireless-lan-wlan/71642-vocera-deploy-guid

NEW QUESTION 25
A network engineer is working on a predictive WLAN design, the new wireless network must support access to Internet, email, voice, and the inventory database, to successfully support these services, which configuration must the engineer use for the signal strength levels and SNR on the planning tool?

A. signal strength of -67 dBm, 25-dB SNR, and maximum 1 percent packet loss.
B. signal strength of -67 dBm, 20-dB SNR, and maximum 5 percent, packet loss.
C. signal strength of 67 dBm, 20-dB SNR, and maximum 1 percent packet loss.
D. signal strength of-70 dBm,30-dB SN
E. and maximum 10 percent packet loss.

Answer: A

Explanation:
https://www.cisco.com/c/en/us/support/docs/wireless/5500-series-wireless-controllers/116057site-survey-gu

NEW QUESTION 29
Which two considerations must a network engineer have when planning for voice over wireless roaming? (Choose two.)

A. Full reauthentication introduces gaps in a voice conversation.
B. Roaming time increases when using 802.1x + Cisco Centralized Key Management.
C. Roaming occurs when the phone has seen at least four APs.
D. Roaming occurs when the phone has reached -80 dBs or below.
E. Roaming with only 802.1x authentication requires full reauthentication.

Answer: AE

Explanation:
https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Mobility/vowlan/41dg/vowlan41dg-book/vowlan_c

NEW QUESTION 32
An engineer must create data-link redundancy for the company's Cisco Wireless LAN Controller. The engineer has decided to configure LAG-based redundancy instead of port-based redundancy. Which three features of LAG-based redundancy influenced this decision? (Choose three.)

A. Packets are always sent out on the same port they are received on.
B. All interface traffic passes as long as one port is up.
C. The same port has multiple untagged dynamics interfaces.
D. Interface connection to two separate nonstacked switches is available.
E. Full bandwidth of all links is available.
F. Ports are grouped into multiple LAGs.

Answer: ABF

Explanation:
https://community.cisco.com/t5/wireless-mobility-documents/lag-link-aggregation/ta-p/3128669

NEW QUESTION 34
Campus users report a poor wireless experience. An engineer investigating the issue notices that in high-density areas, the wireless clients fail to switch the AP to which are automatically connected. This sticky client behavior is causing roaming issues. Which feature must the engineer configure?

A. Load balancing and band select
B. optimized roaming
C. Layer 3 roaming
D. Layer 2 roaming

Answer: B

Explanation:
 https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/80/hdx_final/b_hdx_dg_final/high_de
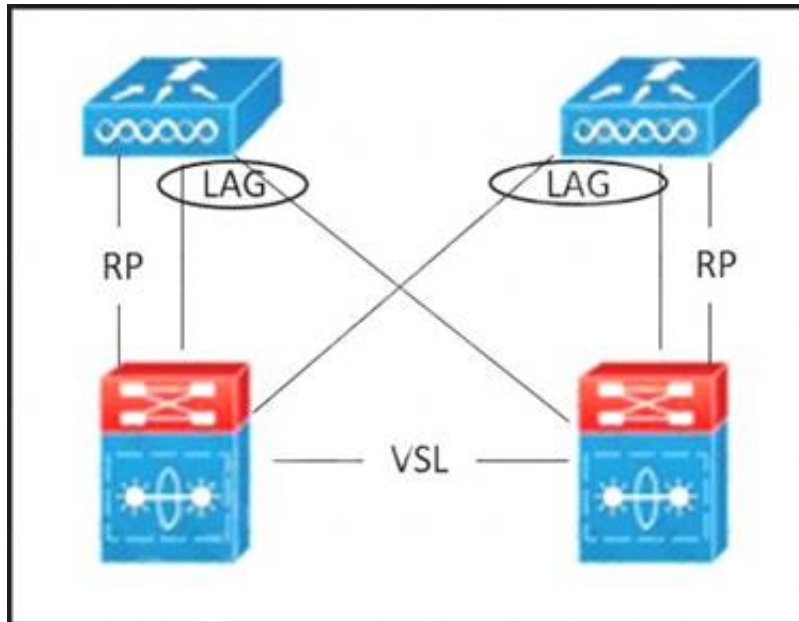
NEW QUESTION 35
During a post-deployment site Survey, issues are found with non wi-Fi interference. What should the
engineer use to identify the source of the Interference?

A. Network analysis module
B. Wireless intrusion prevention
C. Wireshark
D. Cisco spectrum expert

Answer: D

NEW QUESTION 40
Refer to the exhibit.

A WLC SSO pair is set up. Which failure scenario causes a split-brain scenario?

A. RP is down.
B. Two distribution ports on the active WLC are down.
C. VSL is down.
D. One distribution port on the active WLC is down.

Answer: C

NEW QUESTION 44
A wireless deployment in a high-density environment is being used by vendors to process credit card payment transactions via handheld mobile scanners. The scanners are having problems roaming between access points in the environment. Which feature on the wireless controller should have been incorporated in the design?

A. RX SOP
B. 802.11w
C. AP Heartbeat Timeout
D. Application Visibility Control

Answer: A

Explanation:
https://www.cisco.com/c/en/us/td/docs/wireless/controller/8-5/configguide/b_cg85/advanced_wireless_tuning.ht

NEW QUESTION 45
Refer to the exhibit.

Which two statements about Cisco Prime Infrastructure are true? (Choose two.)

A. It presents the recommended number of APs for the selected coverage area based on the selections made.
B. Planning mode requires a special license in Cisco Prime Infrastructure.
C. It shows the map editor feature in Cisco Prime Infrastructure.
D. Controllers must be synchronized with Cisco Prime Infrastructure for planning mode to work.
E. It shows the planning mode feature in Cisco Prime Infrastructure.

Answer: DE

Explanation:

NEW QUESTION 48
A network engineer is preparing for an office site survey with a height of 2.5 meters. Which three components are recommended to complete the survey? (Choose three.)

A. Use a battery pack to power APs
B. Use a drawing of the office space to draw AP and client placements.
C. Use DoS attack on APs while measuring the throughput.
D. Use APs with directional antennas.
E. Use APs with external antennas.
F. Use APs with built-in antennas.

Answer: ABF

Explanation:
https://www.cisco.com/c/en/us/td/docs/wireless/technology/mesh/8-4/b_mesh_84/Site_Preparation_and_Plannin

NEW QUESTION 52
A network administrator of a global organization is collapsing all controllers to a single cluster located in central Europe. Which concern must addressed?

A. Some channels may not be available consistently across the organization.
B. Different RF policies per office are not available in this configuration.
C. Syslog must be configured to the time-zone of the NMS platform.
D. Centralized controllers cannot uniformly authenticate global users.

Answer: C

Explanation:
https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/86/b_Cisco_Wireless_LAN_Controller_Co

NEW QUESTION 54
Which statement about AP failover priority for access points when configured with priority 1 or 4 is true?

A. When configured with priority 1, the access point is assigned with the highest priority level and it is marked as critica
B. This access point fails over before other access points with the lower priority when there is primary controller failure.
C. When configured with priority 4, the access point is assigned with the highest priority level and it is marked as critica
D. This access point fails over before other access points with the lower priority when there is primary controller failure.
E. When configured with priority 4, the access point is assigned with the lowest priority level and it is marked as lo
F. This access point fails over after other access points with the higher priority when there is primary controller failure.
G. When configured with priority 1, the access point is assigned with the medium priority level and it is marked as mediu
H. This access point fails over after other access points with the higher priority when there is primary controller failure.

Answer: B

Explanation:

NEW QUESTION 57
An engineer must perform an assessment of a customer LAN for a future IEEE 802.11ac Wave 2 wireless deployment All access switches are Fast Ethernet-Capable only, and the wired infrastructure between existing APs and access switches is based on the CAT 6A standard. Which two actions provide maximum support of Cisco 3800 Series access points? (Choose two.)

A. Replace the existing switches with mGig switches.
B. Replace the existing switches with gigabit switches with 10G uplinks.
C. Ensure that cable distances between access switches and APs are not longer than 100 meters.
D. Replace the existing wiring infrastructure with the CAT-7E wiring standard,
E. Ensure that cable distances between access switches and APs are not longer than 55 meters.

Answer: AC

NEW QUESTION 61
A technician connects a Cisco Aironet 3700 Series access point to a switch and realizes that the AP is coming up with 3x3 MIMO. Which reason explains this behavior?

A. A redundant power supply is unavailable on the switch.
B. The switch is 802.3af capable.
C. The AP is getting power from a power injector.
D. The switch is PoE+ capable.

Answer: D

Explanation:

The AP 3700 with integrated 802.11ac wave-1 radio is designed to run from Power over Ethernet (PoE) sources, local power, or via mid-span or power injector. If the AP 3700 is powered by PoE and the source is 802.3af (15.4 Watts) the AP will come up and fully function in a 3x3:3 mode, for enhanced performance additional power sources such as 802.3at, enhanced PoE, Cisco PoE Injector-4, or local power may be used. With additional power (greater than 15.4W) supplied, the 3700 will shift into the 4x4:3 mode.

The big difference between 802.3af (PoE) and 802.3at (PoE+) is the amount of power delivered over each standard.

NEW QUESTION 62
Where must the APs be mounted when used in a high-density wireless network to provide 6 dB to 20 dB of attenuation to a cell?

A. in the aisle
B. under the seat
C. above the stage
D. under the stage

Answer: B

Explanation:

Under seat or under desk mounting can provide from 6 dB to 20 dB of attenuation to the cell,

NEW QUESTION 66
During a wireless network design, a customer requires wireless coverage on the perimeter of a building but also wants to minimize signal leakage from the wireless network. Which antenna should be used to accomplish this design?

A. Patch
B. Dipole
C. Monopole
D. Omnidirectional

Answer: C

Explanation:
https://www.cisco.com/c/en/us/td/docs/routers/connectedgrid/antennas/installing-combined/industrial-routers-an

NEW QUESTION 70
A network engineer is configuring high availability on an access point. What is the maximum number of controllers that can be configured?

A. 1
B. 2
C. 3
D. 4

Answer: B

Explanation:

The N+1 HA architecture provides redundancy for controllers across geographically separate data centers with low cost of deployment.

So max 2 will be supported on an AP.

NEW QUESTION 73
Which UDP port numbers are used for exchange mobility packets in an AireOS wireless deployment?

A. UDP 16666 for control plane, EoIP (IP protocol 97) for data plane
B. UDP 16668 for control plane, UDP 16667 for data plane
C. UDP 16667 for control plane, UDP 16666 for data plane
D. UDP 16666 for control plane, UDP 16667 for data plane

Answer: D

Explanation:

- Enable these UDP ports for Mobility traffic:

  - 16666 – Secured Mode
  - 16667 – Unsecured Mode

NEW QUESTION 78
An engineer must configure the virtual IP address on multiple controllers in a mobility group. Which rule must the engineer follows to ensure proper roaming?

A. Ensure that the DNS entry is tied to the virtual IP address of the WLC.
B. Use a unique IP address for each WLC.
C. Ensure that the DNS Host Name field is defined.
D. Use the same IP address for each WLC.

Answer: A

Explanation:

All controllers within a mobility group must be configured with the same virtual interface IP address.

NEW QUESTION 83
APs in a remote office recently have been converted from local mode to FlexConnect to take advantage of the local switching. After the change, remote wireless users report voice quality issues and bad quality on wireless IP phones while roaming. A debug is performed, and it is noticed that the 802.11r Fast Transition is not working as expected, like on local mode AP, though the same WLAN configuration is in place. What is the cause of the issue regarding the FlexConnect APs?

A. They do not support 802.11r FT.
B. They must be added into AP groups along with a common RF profile.
C. They must be in a FlexConnect group to support 802.11r FT.
D. They must be added to AP groups to support fast roaming methods.

Answer: A

NEW QUESTION 87
An engineer is performing a predictive wireless design for a medical treatment environment, which requires data and voice services. What is the minimum requirement for the design?

A. overlapping -72 dBm coverage from two access points
B. continuous -67 dBm coverage from one access point
C. continuous -72 dBm coverage from one access point
D. overlapping -67 dBm coverage from two access points

Answer: B

Explanation:

☑ The TX power of 17 dBi is 50mW. What you see on your laptop of a -20 dBm is a good signal. Cisco's recomendation for data is a max of -72 dBm and for voice it is -65dBm. You will notice this when you start walking away from your AP. So if you are planning on adding another ap, you would want your coverage to be bordering eithe -72 dBm or -65 dBm.

So -67dBm covers both Data & Voice with a single AP

NEW QUESTION 89
An engineer is designing a wireless network that will support many different types of wireless clients. When conducting the survey, which client must be used to ensure a consistent experience for all of the wireless clients?

A. the client that has the highest RF properties
B. the client that is used most by the company
C. the client that is used least by the company
D. the client with the worst RF characteristics

Answer: B

Explanation:

With the proliferation of clients with varying wireless capabilities, it is important to survey for the 'worst' clients in order to ensure a consistent experience across all your clients once your wireless network is in production.

https://documentation.meraki.com/MR/WiFi_Basics_and_Best_Practices/Conducting_Site_Surveys_with_MR_

NEW QUESTION 93
A customer has restricted the AP and antenna combinations for a design to be limited to one model integrated antenna AP for carpeted spaces and one model external antenna AP with high gain antennas for industrial, maintenance, or storage areas. When moving between a carpeted area to an industrial area, the engineer forgets to change survey devices and surveys several APs. Which strategy will reduce the negative impact of the design?

A. Resurvey and adjust the design.
B. Deploy unsurveyed access points to the design.
C. Deploy the specified access points per area type.
D. Increase the Tx power on incorrectly surveyed access points.

Answer: A

NEW QUESTION 96
A wireless engineer is performing a post verification of a wireless network. Which two metrics does the engineer verify to ensure that the wireless network can support voice services? (Choose two.)

A. The coverage area must have a noise floor that does not exceed -87 dBm.
B. The client device must have at least an -67 dBm RSSI.
C. The rate of retransmitted packets must be 15 percent or below.
D. The rate of retransmitted packets must be 20 percent or below.
E. The client device must have at least an -65 dBm RSSI.

Answer: BC

Explanation:

1. The optimal VoWLAN Cell Edge recommendation is -67 dBm.

5. Retransmissions should be kept under 20 percent.

NEW QUESTION 98
An engineer is designing a wireless network to support high availability. The network will need to support the total number of APs and client SSO. Live services should continue to work without interruption during the failover Which two requirements need to be incorporated into the design to meet these needs? (Choose two.)

A. redundant WLC
B. controller high availability pair with one of the WLCs having a valid AP count license
C. 10 sec RTT
D. back-to-back direct connection between WLCs
E. WLC 7.5 code or more recent

Answer: BD

Explanation:
https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/7-5/High_Availability_DG.html#pgfId

NEW QUESTION 100
A customer has determined that aesthetics is a primary concern for their upcoming guest deployment. Which design consideration can be leveraged to address this concern?

A. Paint the access point to cover the LED from being noticeable.
B. Use enclosures to hide the wireless infrastructure in the surrounding environment.
C. Use AIR-AP-BRACKET-1 to allow for greater mounting locations
D. Deploy environmentally friendly cabling components to blend into the environment.

Answer: D

Explanation:

- Use cables that are resistive to bend loss if excessive bending of cables cannot be prevented due to installation constraints.

- Avoid mounting the cabling components in places that block accessibility to other equipment (such as a power strip or fans) in and out of the racks.

NEW QUESTION 101
Which non-Wi-Fi interferer can be identified by Metageek Chanalyzer?

A. PDAs
B. jammers
C. smartphones
D. printers

Answer: B

Explanation:
https://www.metageek.com/training/resources/wifi-and-non-wifi-interference

A jamming transmitter creates constant noise across each frequency. These are used in a denial-of-service attack, and

will prevent other wireless technologies from fully operating.

NEW QUESTION 102
An engineer changed the TPC Power Threshold for a wireless deployment from the default value to -65 dBm. The engineer conducts a new post-deployment Survey to validate the results. What is the expected outcome?

A. Increase cell size
B. Decreased client signal strength
C. Increased received sensitivity
D. Decreased channel overlap

Answer: A

NEW QUESTION 106
The wireless team must configure a new voice SSID for optimized roaming across multiple WLCs with Cisco 8821 phones. Which two settings accomplish this goal? (Choose two.)

A. Configure mobility groups between WLCs.
B. Use Cisco Centralized Key Management for authentication.
C. Configure AP groups between WLCs.
D. Configure AVC profile on new SSID.
E. Use AVC to tag traffic voice traffic as best effort.

Answer: AB

NEW QUESTION 109
An engineer Is trying to determine the most cost-effective way to deploy high availability for a campus enterprise wireless network that currently leverages three wireless LAN controllers. Which architecture should the engineer deploy?

A. N+1 solution without SS0
B. N+1 with SSO
C. N+N solution without SSO
D. N+N with SSO

Answer: B

Explanation:
https://www.cisco.com/c/en/us/td/docs/wireless/technology/hi_avail/N1_High_Availability_Deployment_G

NEW QUESTION 113
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