Cisco

Exam 640-722

Implementing Cisco Unified Wireless Networking Essentials v2.0

Version: 42.1

[Total Questions: 277]

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Topic 1, Describe WLAN Fundamentals

Question No : 1 - (Topic 1)

What is the difference between the IEEE, the WiFi Alliance, and the FCC, ETSI, and TELEC?

A. The IEEE and FCC are responsible for the standards that apply to wireless networks. The WiFi Alliance, ETSI, and TELEC are the governmental agencies that regulate compliance with local standards.
B. The IEEE is responsible for Layer 1 and Layer 2 protocols. The WiFi Alliance is responsible for interoperability testing. The FCC, ETSI, and TELEC are responsible for radio frequency and transmission power-level regulations and standards in the U.S., Europe, and Japan.
C. The IEEE is responsible for Layer 1 and Layer 2 protocols. The FCC, ETSI, and TELEC are responsible for interoperability testing and compliance. The WiFi Alliance is responsible for radio frequency and transmission power-level regulations and standards on a global basis.
D. The IEEE and FCC are responsible for the Layer 3 protocol support and frequency and power-level regulations in the United States. ETSI and TELEC are responsible for frequency and power-level regulations in Europe and Japan. The WiFi Alliance is responsible to interoperability testing.

Answer: B

Explanation:

The FCC is the local regulatory authority responsible for frequency regulation in the United States. ETSI is a European standards organization responsible for producing standards for information and communications technologies. The Wi-Fi Alliance is an interoperability testing organization. The IEEE creates standards, and WPA is a pre-802.11 certification by the Wi-Fi Alliance.

Question No : 2 - (Topic 1)

What are the three primary functions of the Cisco Unified Wireless LWAPP architecture? (Choose three.)

A. control and management of the CAPWAP

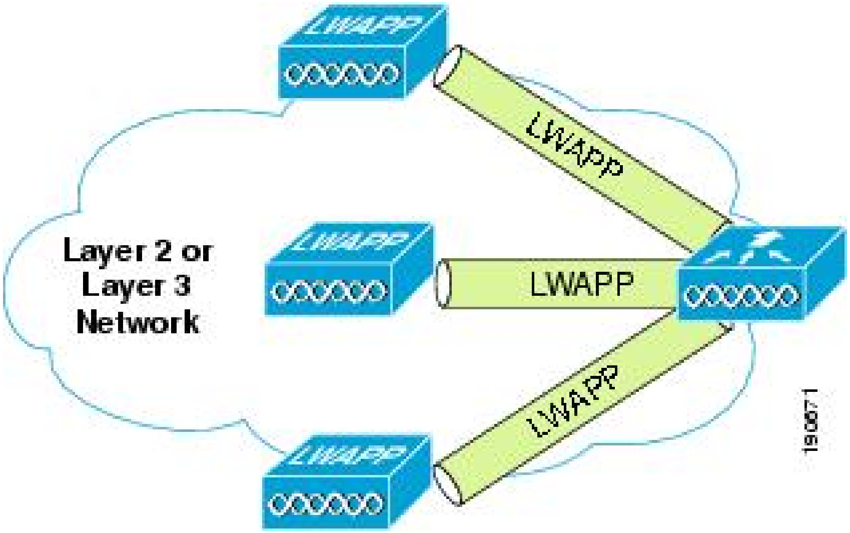
B. tunneling of VPN clients over the WAN
C. tunneling of WLAN client traffic to the WLC
D. collection of 802.1Q trunks
E. collection of 802.11 data for management
F. control and management of VTP

Answer: A,C,E

Explanation:

Figure below illustrates one of the primary features of the architecture — how Lightweight Access Point Protocol (LWAPP) access points (LAPs) use the LWAPP protocol to communicate with and tunnel traffic to a WLC.

Figure 4-2 LAP and WLC Connection



LWAPP has three primary functions:

- Control and management of the LAP
- Tunneling of WLAN client traffic to the WLC
- Collection of 802.11 data for the management of the Cisco Unified Wireless System

Reference:
http://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Mobility/secwlandg20/sw2dg/ch4_2_SPMb.html

Question No : 3 - (Topic 1)

Which option describes computer-to-computer wireless communication?

A. BSS and BSA
B. IBSS and ad hoc network
C. ad hoc network and BSA
D. IBSS and ESS
E. ESS and BSA
F. BSS and ad hoc network

Answer: B

Explanation:

Ad-hoc mode is an 802.11 networking framework in which devices or stations communicate directly with each other, without the use of an access point (AP). Ad-hoc mode is also referred to as peer-to-peer mode or an Independent Basic Service Set (IBSS). Ad-hoc mode is useful for establishing a network where wireless infrastructure does not exist or where services are not required.

Reference: http://www.webopedia.com/TERM/A/ad_hoc_mode.html

Question No : 4 - (Topic 1)

What is an MBSSID?

A. a virtual AP configured on a physical AP that share a single physical device, which is one half-duplex radio
B. a set of physical APs configured in a BSA to form cells that are controlled by a single controller
C. the group of clients that are allowed to gain access to one or more SSIDs configured in an AP
D. the identified overlap area between two cells, which identifies the clients that are operating in that area at any given time

Answer: A

Explanation:

Some APs can offer only one SSID per radio. Other APs have a slot of MAC addresses available and can support several SSIDs per radio, using Multiple BSSIDs (MBSSID). MBSSIDs basically are virtual APs that still share the same physical device, which has a half-duplex radio. MBSSIDs are a way to differentiate the traffic reaching the AP, not a way to increase the capacity of the AP.

Reference: CCNA Wireless (640-722 IUWNE) Quick Reference Guide

Question No : 5 - (Topic 1)

If an antenna has a dBd of 8.6, what is the dBi value?

A. 6.2
B. 6.46
C. 8.6
D. 10.74
E. 12.88

Answer: D
Explanation:

Antenna performance is measured in dBi (the antennas gain/loss over a theoretical isotropic antenna) dBd (the antennas gain/loss over a dipole antenna)

dBi = dBd + 2.15

dBd = dBi – 2.15

Question No : 6 - (Topic 1)

Which statement describes spread spectrum technology in wireless communications?

A. Signal is spread across optical pulses.
B. Signal is spread across variations of amplitudes.
C. Signal is spread across one frequency.
D. Signal is spread across a whole band of frequencies.

Answer: D

Explanation:

spread-spectrum techniques are methods by which a signal with a particular bandwidth is deliberately spread in the frequency domain, resulting in a signal with a wider bandwidth. Spread spectrum generally makes use of a sequential noise-like signal structure to spread the normally narrowband information signal over a relatively wideband (radio) band of frequencies.

Reference: http://en.wikipedia.org/wiki/Spread_spectrum

Question No : 7 - (Topic 1)

What are three characteristics of the 802.11g standard? (Choose three.)

A. speed of as much as 11 Mb/s
B. speed of as much as 54 Mb/s
C. backward-compatibility with 802.11a
D. backward-compatibility with 802.11b
E. OFDM as an additional modulation technique
F. OFDM and CCK as additional modulation techniques

Answer: B,D,E

Explanation:

802.11g is the third modulation standard for wireless LANs. It works in the 2.4 GHz band (like 802.11b) but operates at a maximum raw data rate of 54 Mbit/s. Using the CSMA/CA transmission scheme, 31.4 Mbit/s [1] is the maximum net throughput possible for packets of 1500 bytes in size and a 54 Mbit/s wireless rate (identical to 802.11a core, except for some additional legacy overhead for backward compatibility). In practice, access points may not have an ideal implementation and may therefore not be able to achieve even 31.4 Mbit/s throughput with 1500 byte packets. 1500 bytes is the usual limit for packets on the Internet and therefore a relevant size to benchmark against. Smaller packets give even lower theoretical throughput, down to 3 Mbit/s using 54 Mbit/s rate and 64 byte packets. Also, the available throughput is shared between all stations transmitting, including the AP so both downstream and upstream traffic is limited to a shared total of 31.4 Mbit/s using 1500 byte packets and 54 Mbit/s rate.

802.11g hardware is fully backwards compatible with 802.11b hardware. Details of making b and g work well together occupied much of the lingering technical process. In an 802.11g network, however, the presence of a legacy 802.11b participant will significantly reduce the speed of the overall 802.11g network. Some 802.11g routers employ a back-compatible mode for 802.11b clients called 54g LRS (Limited Rate Support). [2]

The modulation scheme used in 802.11g is orthogonal frequency-division multiplexing (OFDM) copied from 802.11a with data rates of 6, 9, 12, 18, 24, 36, 48, and 54 Mbit/s, and reverts to CCK (like the 802.11b standard) for 5.5 and 11 Mbit/s and DBPSK/DQPSK+DSSS for 1 and 2 Mbit/s. Even though 802.11g operates in the same frequency band as 802.11b, it can achieve higher data rates because of its heritage to 802.11a.

Reference: http://en.wikipedia.org/wiki/IEEE_802.11g-2003

Question No : 8 - (Topic 1)

What are three primary components that describe TKIP? (Choose three.)

A. broadcast key rotation
B. dynamic WEP
C. message integrity check
D. per-packet key hashing
E. symmetric key cipher
F. WPA2 enterprise mode

Answer: A,C,D

Explanation:

TKIP uses the same underlying mechanism as WEP, and consequently is vulnerable to a number of similar attacks. The message integrity check, per-packet key hashing, broadcast key rotation, and a sequence counter discourage many attacks. The key mixing function also eliminates the WEP key recovery attacks.

Reference: http://en.wikipedia.org/wiki/Temporal_Key_Integrity_Protocol

Question No : 9 - (Topic 1)

Which two statements about AES-CCMP are true? (Choose two.)

A. It is an encryption algorithm used in the 802.11i security protocol.
B. It is defined in 802.1X.
C. It is the encryption algorithm used in TKIP implementations.
D. It is required in WPA.
E. It is required in WPA2.

Answer: A,E
Explanation:

WPA2 has replaced WPA. WPA2, which requires testing and certification by the Wi-Fi Alliance, implements the mandatory elements of IEEE 802.11i. In particular, it includes mandatory support for CCMP, an AES-based encryption mode with strong security.

Reference: http://en.wikipedia.org/wiki/Wi-Fi_Protected_Access

Question No : 10 - (Topic 1)

Which spread spectrum technique uses 11-bit chips to transmit 1 bit of data over a 22-MHz channel?

A. DSSS
B. FHSS
C. OFDM
D. MIMO
E. CCK

Answer: A
Explanation:

For every 0 or 1 you want to send, DSSS generates a code representing that 0 or that 1. This code, also called symbol or chip, can be a sequence of up to 11 bits (this is called the Barker 11 code), and these 11 bits are sent in parallel over the 22 MHz channel. You can lose up to nine of these 11 bits due to interferences and still understand whether the code sent was supposed to represent a 0 or a 1.

Reference: Reference: CCNA Wireless (640-722 IUWNE) Quick Reference Guide page 23

Question No : 11 - (Topic 1)

The network administrator receives complaints of slow wireless network performance and performs a sniffer trace of the wireless network in preparation for migration to 802.11n. The sample capture shows frames that contains AP beacons with NonERP_Present bit set to 1 and frames with RTS/CTS.

Which two conclusions can be interpreted from these frames? (Choose two.)

A. The network is performing slowly because 802.11n clients are already mixed with 802.11g clients.
B. The network is performing slowly because 802.11b clients still exist in the network.
C. The network is performing slowly because a wireless client is incorrectly configured, which results in RF interference.
D. Possible 802.11b wireless clients are located only in the AP cell radius where the sniffer capture was performed.
E. Possible 802.11b wireless clients could be located anywhere in the wireless network.

Answer: B,E
Explanation:

If an ERP AP hears a beacon from an AP where the supported data rates contain only 802.11b or 802.11 DSSS rates, it will enable the NonERP_Present bit in its own beacons, enabling protection mechanisms in its BSS. In simpler terms, if an 802.11g AP hears a beacon frame from an 802.11 or 802.11b access point or ad hoc client, the protection mechanism will be triggered.

Reference: http://mrncciew.com/2014/11/02/cwap-802-11-protection-mechanism/

Question No : 12 - (Topic 1)