CWNA

Exam PW0-104

Wireless LAN Administration

Version: 6.2

[Total Questions: 155]

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Question No : 1

What word describes the bending of an RF signal as it passes between mediums of different density?

A. Diffraction
B. Reflection
C. Refraction
D. Diffusion
E. Scattering

Answer: C

Question No : 2

What causes an excessively high Voltage Standing Wave Ratio (VSWR) in an 802.11 WLAN?

A. An impedance mismatch between devices in series with the main RF signal
B. Reflected DC voltage on the main RF signal line
C. Refracted RF signal peaks along the main signal path
D. Crosstalk (inductance) between adjacent conductors

Answer: A

Question No : 3

What factors affect the distance that an RF signal can be effectively received?

A. Transmitting station's antenna type
B. Receiving station's radio sensitivity
C. Fresnel zone blockage
D. Power over Ethernet (PoE) usage
E. Antenna connector type
F. Distance between access points

Answer: A,B,C

Question No : 4

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As an RF wave propagates through space, the wave front experiences natural expansion. What is the

detrimental effect of this expansion in a WLAN system?

A. Linear Diffusion Loss
B. Signal Attenuation
C. Transmission Obfuscation
D. Fresnel Zone Thinning
E. Azimuth Inflation

Answer: B

Question No : 5

Given: ABC Company's network administrator was just asked to install a 5 GHz OFDM

bridge link between two buildings. He connected a WLAN bridge with a 50-ohm output to a 50-ohm RF coaxial

cable.

He connected the other end of the RF coaxial cable to a 25-ohm, 6 dBi Yagi antennA.

What is the maximum VSWR between the WLAN bridge and the Yagi antenna?

A. 1.0:1
B. 1.1:1
C. 1.2:1
D. 1.5:1
E. 2.0:1
F. 1.0:2

Answer: E

Question No : 6

Given: Return Loss is the decrease of forward energy in a system because some of the power is being

reflected back toward the transmitter.

What can cause a high return loss in an RF transmission system?

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A. A Voltage Standing Wave Ratio (VSWR) of 1.5:1
B. An impedance mismatch between devices in the RF system
C. Cross-polarization of the RF signal as it passes through the RF system
D. The use of multiple connector types in the RF system (e.g. N-type and SMA-type)
E. Low output power at the transmitter and use of a high-gain antenna

Answer: B

Question No : 7

What factor is NOT taken into account when calculating the System Operating Margin of a point-to-point

outdoor WLAN bridge link?

A. Operating frequency
B. Tx antenna gain
C. Tx power
D. Rx cable loss
E. Antenna height
F. Rx sensitivity
G. Distance

Answer: E

Question No : 8

Given: A WLAN transmitter that emits a 200 mW signal is connected to a cable with a 9 dB loss.

if the cable is connected to an antenna with a 10 dBi gain, what is the EIRP at the antenna element?

A. 50 mW
B. 250 mW
C. 500 mW
D. 750 mW
E. 1000 mW

Answer: B

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Question No : 9

In a long-distance RF link, what statement about Fade Margin is true?

A. Fade Margin is an amount of signal strength in addition to the Link Budget.
B. The Fade Margin of a long-distance RF link does not account for antenna gain.
C. Fade Margin is rarely taken into account on a long-distance RF link.
D. Fade Margin and Jamming Margin are synonymous, interchangeable terms.

Answer: A

Question No : 10

Which units of measure are used to describe relative power level changes?

A. dBm
B. dBi
C. dB
D. mW
E. dBW

Answer: B,C

Question No : 11

Given: A 802.11 WLAN transmitter that emits an 80 mW signal is connected to a cable with 3 dB loss.

The cable is connected to an antenna with a 16 dBi gain.

What is the resultant antenna power output (EIRP)?

A. 160 mW
B. 320 mW
C. 800 mW
D. 1200 mW
E. 1600 mW

Answer: E

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Question No : 12

What factors are required to establish a high quality 2.4 GHz point-to-point RF link at a distance of 3

miles (5 kilometers)?

A. Accurate Link Budget calculations
B. Accurate Earth Bulge calculations
C. System Operating Margin (SOM) of at least 20 dB
D. A minimum antenna gain of 13 dBi
E. A Fresnel Zone that is at least 60% clear of obstructions

Answer: A,E

Question No : 13

What phrase defines Equivalent Isotropically Radiated Power (EIRP)?

A. Transmitter output power plus attached cable and connector loss
B. Transmitter output power only
C. Power supplied to the antenna plus antenna gain
D. Reflected power due to an impedance mismatch in the signal path
E. Power supplied to an RF antenna

Answer: C

Question No : 14

What term describes the effect of increasing the intensity of an RF wave when the RF antenna lobe is

focused in a desired direction?

A. Directional Extension
B. Active Amplification
C. Beam Compression
D. Passive Gain
E. Phased Propagation

Answer: D

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Question No : 15

Which antenna types can be used in a scenario where simple receive diversity is required?

A. Omni-directional
B. Patch
C. Yagi
D. Grid
E. MIMO Sector
F. Sector Array

Answer: A,B

Question No : 16

While working on a presentation document in a conference room equipped with a wireless network, you notice that, as you turn your laptop in different directions, your wireless signal strength changes. What statement describes the RF signal property that is primarily responsible for this change in signal strength?

A. The RF signal's amplitude is changing due to a change in the visual line-of-sight.
B. The RF signal's wavelength is being affected by varying antenna gain.
C. The RF signal's multipath is changing the amount of RF absorbed by nearby objects.
D. The RF signal's phase is oscillating due to electromagnetic interference (EMI).
E. The RF signal's polarization is different than the receiving antennA.

Answer: E

Question No : 17

What antenna characteristic decreases as the gain of the antenna is increased?

A. Beamwidth
B. Range
C. Dissipated heat
D. Polarization radius
E. Fresnel Zone

Answer: A

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Question No : 18

What characteristics determine the diameter of the first Fresnel Zone for a 802.11 WLAN link?

A. Antenna beamwidths
B. Size of the antenna elements
C. Distance between the antennas
D. Frequency of the transmission
E. Transmission power
F. Antenna gain

Answer: C,D

Question No : 19

What statements about the beamwidth of an RF antenna are true?

A. The lower the gain of an antenna, the more narrow one or both beamwidths become.
B. The RF signal stops propagating at the beamwidth borders.
C. Beamwidth is calculated by the -3 dB points from the center axis, both horizontally and vertically.
D. Horizontal beamwidth is displayed (in degrees) on the antenna Azimuth Chart.
E. Beamwidth is calculated using the length of the antenna element.

Answer: C,D

Question No : 20

What antenna technologies are used to help overcome null areas of RF coverage due to multipath?

A. Simple Diversity
B. Phase Dispersion
C. Circular Polarization
D. Beam Linearization
E. Transmit Beamforming
F. Spectral Clarification

Answer: A,E

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Question No : 21

ABC Company has just purchased a 6 dBi patch antennA. After performing some tests with the 6 dBi

antenna, they have concluded that more antenna gain is needed to cover their long hallway.

When choosing an antenna with higher gain, what other antenna characteristic will also change?

A. Fresnel Zone size
B. Maximum input power
C. Beamwidths
D. Return Loss
E. VSWR Ratio

Answer: C

Question No : 22

Given: XYZ Company is constructing a building-to-building ERP-OFDM bridge link

using patch antennas. The buildings are 4 blocks apart in the middle of

a large city. XYZ Company is using the rooftop of each building

for antenna placement. There are several buildings closely spaced between the

two locations, but there is a narrow visual line-of-sight. The link does not work as XYZ Company had

hoped.

What would you do to rectify this problem at the lowest possible cost?

A. Change the antennas to high gain parabolic dish or grid antennas with a narrow beamwidth. This will
sufficiently shrink the Fresnel Zone to an area where other buildings are not impeding.
B. Decrease the output power to the minimum allowed by the link budget calculation. This will minimize the size of the Fresnel Zone and increase the quality of the wireless link.
C. Use a vertically-polarized antenna on one building and a horizontally-polarized antenna on the other to decrease the size of the Fresnel Zone. Cross-polarization will shrink the Fresnel Zone
size while allowing the output power to remain the same.

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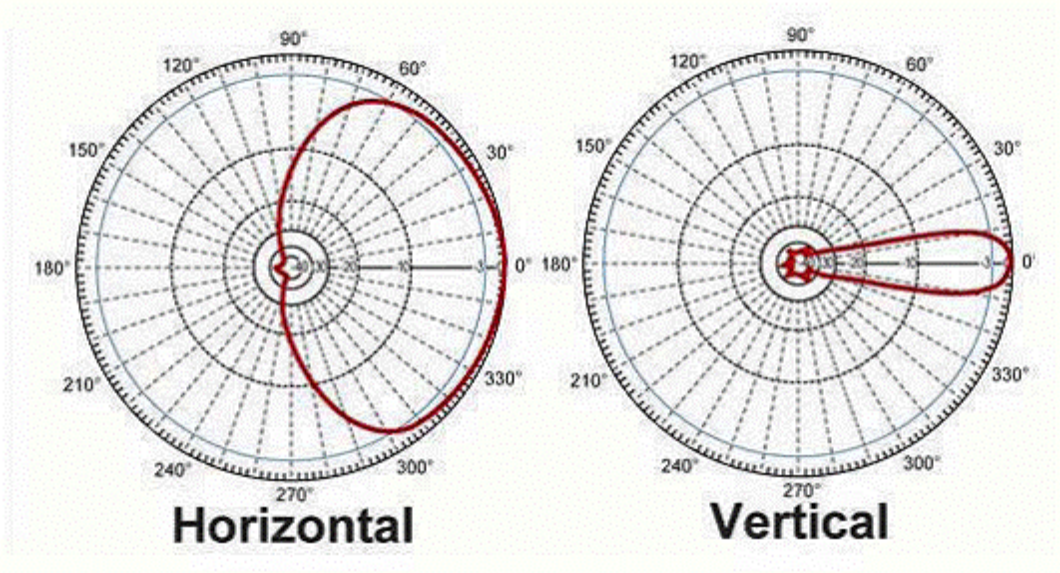
D. On top of each building, place a mast or tower that is tall enough to completely clear the Fresnel Zone of obstructions between the two antennas.

Answer: D

Question No : 23



The exhibit illustrates the azimuth and elevation for what type of antenna?

A. Indoor omni-directional
B. Outdoor 20 degree vertical yagi
C. Outdoor 120 degree horizontal sector
D. Indoor 60 degree horizontal patch
E. Outdoor 10 degree vertical grid

Answer: C

Question No : 24

What are some common specifications for 802.11 WLAN antennas?

A. Spectral Resilience
B. Operating Temperature
C. Impedance in Ohms
D. Azimuth Beamwidth
E. Return Loss Rating

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