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PRINTABLES

PRINTABLE PRACTICE QUESTIONS

QUESTIONS, ANSWERS, AND
DETAILED EXPLANATIONS IN AN
EASY-TO-USE PRINTABLE FORMAT

Chapter 1

Radio Frequency (RF) Technologies

1. What is the maximum number of co-located access points that can exist within the ESS without channel re-use in the 2.4GHZ ISM band, using only 802.11g devices and a 54Mb data rate? Select the best answer.
- A. 14 channels are available for use within the 2.4GHz space and all may be used to achieve maximum throughput.
 - B. 3 is the maximum number of access points that can be co-located without channel re-use.
 - C. Regulatory bodies limit the number of access points used within a given area. The answer will vary by regulatory domain.
 - D. 7 can be used if only evenly numbered channels are used i.e. 2,4,6,8,10,12 and 14.
 - E. By implementing FHSS, you can successfully co-locate 15-79 access points depending upon the hop pattern and power settings used.
 - F. An ESS is defined as having only one access point. Therefore only one access point can be used.

[Find the Answer](#) p. 105

2. Using an access point with the transmit power set to 100mW, you connect a 12dBi gain Yagi antenna with 100' of 3dB loss/100' cable. What is the resulting Equivalent Isotropic Radiated Power? Select the best answer.
- A. 1 Watt.
 - B. 50mW.
 - C. 800mW.
 - D. 800dB.

[Find the Answer](#) p. 105



3. Due to partial blockage of the Fresnel Zone, your long distance outdoor bridge is not functioning properly. Which of the following solutions should be implemented to correct this problem? Select the best answer.
- A. Convert the radios in your bridges to use 802.11g, rather than 802.11b, so that the wavelength would be smaller.
 - B. Exchange the Yagi antennas that are in use for Parabolic dish antennas to use a narrower beam.
 - C. Increase the power used on the bridges, so that the blockage may be adequately penetrated.
 - D. Raise the antenna on one or both sides of the link, allowing the Fresnel zone to be above the obstruction.

[Find the Answer](#) p. 105

4. The cable connecting your AP to your antenna was damaged. Another administrator replaced the cable for you with a brand new one. Now users report poor signal strength. What could be causing the problem? Select the best answer.
- A. Even though the new section of cable is the correct type, it may be longer than the section it replaced. The longer cable would increase the amount of attenuation in the system, reducing power output.
 - B. There is no problem with the system. Cable length has no effect on the power output of the system. The cable is a copper core and the antennas emit RF.
 - C. The old cable was broken in and the new cable will wear in, thus increasing the speed of the connection back to the original speed.
 - D. The new cable is using a drip loop and the older cable did not use one.

[Find the Answer](#) p. 105



5. What is the greatest amount of theoretical throughput you can achieve in the 2.4 GHz spectrum without channel reuse in the same physical area using 802.11g compliant devices? Select the best answer.
- A. 66mB can be achieved by using channel 11 on an 802.11b AP and channel 1 on an 802.11g AP.
 - B. 33mB may be achieved by using 3 AP's in 802.11b, one on each of the following channels 1, 6, and 11.
 - C. 108mB is the maximum. This can be accomplished by using super G mode on your AP.
 - D. 162mB

[Find the Answer](#) p. 105

6. Which of the following are mandatory data rates in the middle UNII band as defined by the 802.11a amendment? Select the best answer.
- A. 6, 12, and 24 Mbps
 - B. 6, 24, and 36 Mbps
 - C. 1, 2, 5.5, 11 Mbps
 - D. 6, 18, 24, and 54 Mbps

[Find the Answer](#) p. 105

7. Which of the following antenna types would be best suited for an outdoor point to point bridge link? Select all that apply.
- A. Sectorized Array
 - B. Grid
 - C. A high gain Omni Directional
 - D. Yagi
 - E. Isotropic Radiator
 - F. Parabolic Dish

[Find the Answer](#) p. 105



Answers: Chapter 1

1. B	Review Question p. 2	Detailed Explanation p. 121
2. C	Review Question p. 2	Detailed Explanation p. 121
3. D	Review Question p. 3	Detailed Explanation p. 121
4. A	Review Question p. 3	Detailed Explanation p. 122
5. D	Review Question p. 4	Detailed Explanation p. 122
6. A	Review Question p. 4	Detailed Explanation p. 123
7. B, D, F	Review Question p. 4	Detailed Explanation p. 123
8. A	Review Question p. 5	Detailed Explanation p. 124
9. D	Review Question p. 5	Detailed Explanation p. 124
10. C	Review Question p. 5	Detailed Explanation p. 124
11. C	Review Question p. 6	Detailed Explanation p. 125
12. C	Review Question p. 6	Detailed Explanation p. 125
13. D	Review Question p. 6	Detailed Explanation p. 126
14. D	Review Question p. 7	Detailed Explanation p. 126
15. A, C	Review Question p. 7	Detailed Explanation p. 126
16. A	Review Question p. 7	Detailed Explanation p. 127
17. D	Review Question p. 8	Detailed Explanation p. 127
18. E	Review Question p. 8	Detailed Explanation p. 127
19. C	Review Question p. 9	Detailed Explanation p. 128
20. F	Review Question p. 9	Detailed Explanation p. 129
21. D, F	Review Question p. 9	Detailed Explanation p. 129
22. A	Review Question p. 10	Detailed Explanation p. 130
23. A, C	Review Question p. 10	Detailed Explanation p. 130

Explanations: Chapter 1

1. [Review Question](#) p. 2

Answers: B

Explanation A. Incorrect! A maximum of 3 channels can be used in 2.4GHz in the same area without channel re-use.

Explanation B. Correct. Channels 1, 6, and 11 can be used. One channel is used on each of the 3 access points and produces the least amount of adjacent or co-channel interference. Although there are 14 channels available, use of more than 3 channels cannot be done within the same area without creating interference.

Explanation C. Incorrect. Governing bodies regulate the frequency and power allowed for use, not the number of access points used.

Explanation D. Incorrect. Even though the channels are not directly next to each other, there is not enough separation here to avoid adjacent channel interference.

Explanation E. Incorrect! The question stated that only 802.11g devices were in use. FHSS is only an 802.11 technology and cannot achieve the 54Mb rate.

Explanation F. Incorrect. An ESS contains 2 or more access points.

PrepLogic Question: [10720-100](#)

2. [Review Question](#) p. 2

Answers: C

Explanation A. Incorrect! The correct answer is 800mW.

Explanation B. Incorrect! The correct answer is 800mW.

Explanation C. Correct! 100mW at the transmitter would be 50mW at the Intentional Radiator, due to the 3dB loss in the cable. 50mW would then be converted to 800mW by the 12dBi gain of the antenna.

Explanation D. Incorrect! The correct answer is 800mW. Decibels are a measurement of change. mW and Watts are measured power.

PrepLogic Question: [10720-101](#)

3. [Review Question](#) p. 3



Answers: D

Explanation A. Incorrect! Both 802.11b and 802.11g use the same frequency (2.4GHZ) and therefore have the same size wavelength.

Explanation B. Incorrect! The type of antenna used has no effect on the size of the Freznel zone.

Explanation C. Incorrect! Changes in the power output of the bridges will have no effect upon the Freznel zone.

Explanation D. Correct! The Freznel zone size is calculated using the distance between endpoints and frequency used. Raising the antenna will allow the blockage to be avoided.

PrepLogic Question: [10720-102](#)

4. [Review Question](#) p. 3**Answers: A**

Explanation A. Correct! A longer section of cable used in place of the original shorter cable would cause a greater amount of loss in the system. The result would be a lower IR value.

Explanation B. Incorrect! The amount of cable used can increase or decrease the power received at the antenna based upon the cables rated loss and length of the cable.

Explanation C. Incorrect! Cables do not have a wear in period.

Explanation D. Incorrect! It is not the loop that would cause a problem, but rather the length that matters.

PrepLogic Question: [10720-103](#)

5. [Review Question](#) p. 4**Answers: D**

Explanation A. Incorrect! Channels 1 and 11 cause the least amount of adjacent channel interference for each other in the 2.4 spectrum. However, more throughput can be achieved by using channels 1, 6, and 11 with 802.11g AP's.

Explanation B. Incorrect! Although the statement is true, it is not the maximum achievable throughput for an 802.11g WLAN system.

Explanation C. Incorrect! Super G mode will allow you to achieve 108mB. However,



that is per AP and using it on multiple AP's in the same area would cause interference.

Explanation D. Correct! You can co-locate up to 3 access points in the same physical area without channel reuse in the 2.4 spectrum. If you use 802.11g devices at 54mB each, the total throughput would be 162mB.

PrepLogic Question: [10720-104](#)

6. [Review Question](#) p. 4

Answers: A

Explanation A. Correct! These are the mandatory rates. The other rates used in 802.11a are supported but are not mandatory and are the same for all 3 UNII bands.

Explanation B. Incorrect! The mandatory rates are 6, 12, and 24 Mbps.

Explanation C. Incorrect! The mandatory rates are 6, 12, and 24. 1, 2, 5.5, 11 Mbps speeds are supported in 802.11b DSSS.

Explanation D. Incorrect! The mandatory rates are 6, 12, and 24 Mbps.

PrepLogic Question: [10720-105](#)

7. [Review Question](#) p. 4

Answers: B, D, F

Explanation A. Incorrect! Sectorized Array Antennas provide too large a coverage area. They are typically used in an omni-directional pattern. Sector antennas radiate very little power behind themselves. This makes them ideal to be mounted back-to-back and not interfere with each other while concentrating RF within a "sector" out in front of them.

Explanation B. Correct! A grid antenna is a directional antenna and a good match for an outdoor bridge.

Explanation C. Incorrect! An Omni directional antenna creates too large a coverage area, and does not concentrate the RF in the direction needed (for both transmission and reception).

Explanation D. Correct! Although a Yagi is a semi directional antenna, they are often used in outdoor bridging scenarios.

Explanation E. Incorrect! There is no such antenna type. It is only a theoretical antenna.

