

Name: _____

CST8304 Midterm -W17

Multiple Choice

Identify the one choice that best completes the statement or answers the question.

1. A wireless Laptop with IP Address 10.1.11.45 is connected to your Employee SSID in the lab. The AP the client is associated to has IP Address 10.1.10.20. A ping is sent from the laptop to the AP. Which devices does the frame traverse, in order, as it travels from the Laptop to the AP?
- Laptop --> AP
 - Laptop --> AP --> Switch --> Controller --> Switch --> Controller --> AP
 - Laptop --> AP --> Switch --> Controller --> Switch --> AP
 - Laptop --> Controller --> AP
 - Laptop --> AP --> Controller --> Switch --> Controller --> AP



2. At Algonquin, an Aruba AP will support ACGuest and ACSecure on the same channel.

- True ✓
- False

3. Which of the following Aruba Virtual AP forwarding modes have we used in the lab with CAPs (Campus APs)? *

- Bridge
- Tunnel ✓
- Split-Tunnel
- Decrypt-Tunnel
- None of the above

4. How many APs are there in an Extended Service Set *

- 1
- 2
- 2 or more ✓
- none
- 37.5

↓ or more

5. What if we connect a new AP in T115. How does it know which of the controllers it should connect to?

- The controller address is determined using DNS
- The controller address is provided via DHCP
- It will not know which controller to connect to until it is provisioned
- The appropriate controller will find the AP
- None of the above

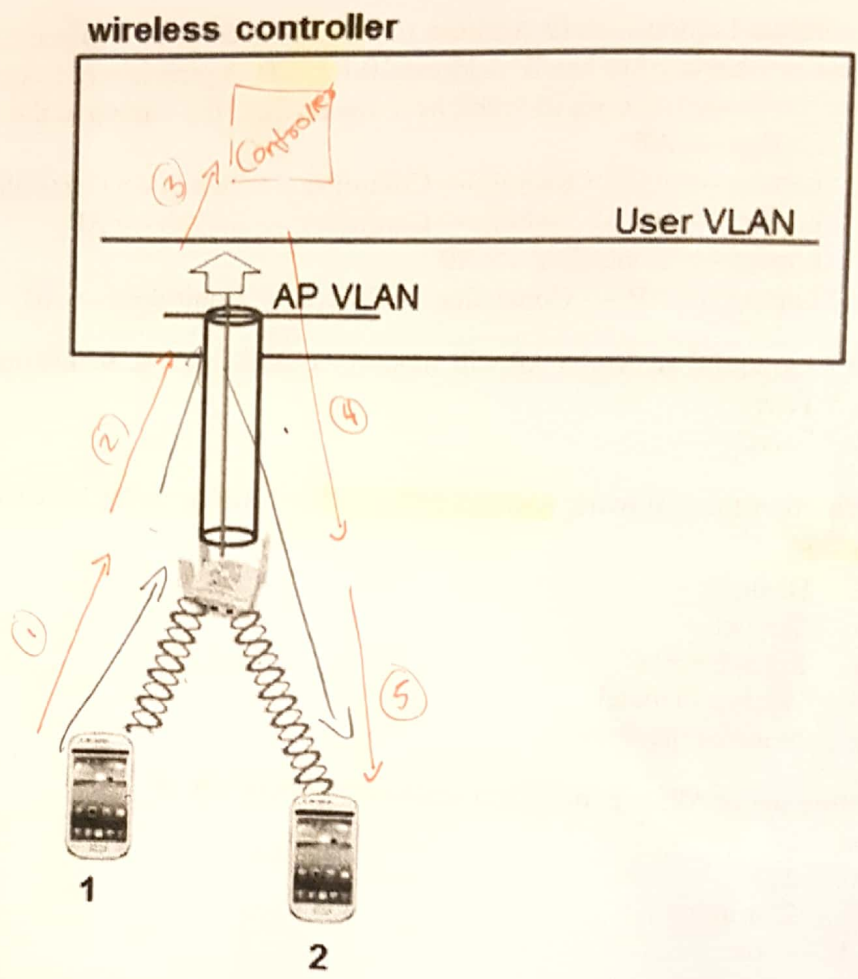
6. An Independent basic service set requires a minimum of how many access points?

- 0 ✓
- 1
- 2
- More than 1
- None of the above

IBSS - Ad hoc

7.

From Wireless Station to Wireless Station



If Cellphone 1 sends WiFi data to Cellphone 2, what path will the data take? Both cellphones are associated to the same SSID on the same AP.

- a. Cellphone 1 -> Cellphone 2
- b. Cellphone 1 -> AP -> Cellphone 2
- c. Cellphone 1 -> AP -> Controller -> Cellphone 2
- d. Cellphone 1 -> AP -> Controller -> AP -> Cellphone 2
- e. None of the above

8. Our network has 3 dual band Aruba APs. Each AP is providing an Employee and a Guest SSID on both radios. How many SSIDs are there? *

- a. 1
- b. 2
- c. 3
- d. 6
- e. 12

9. Which frequencies will experience greater attenuation? *

- a. Higher frequencies
- b. All frequencies will experience the same attenuation
- c. Attenuation is not related to frequency
- d. Lower frequencies
- e. None of the above

10. A Basic Service Set has how many access points? *

- a. None
- b. 1
- c. 2
- d. 1 or more
- e. More than 1

11. Which 802.11 protocols operate in the 5 GHz frequency band? *

- a. 802.11b and 802.11g
- b. 802.11n and 802.11ac
- c. 802.11a, 802.11n and 802.11ac
- d. 802.11a and 802.11ac
- e. 802.11a and 802.11n

12. A student in room T115 connects one of the desktop computers to port 25 on the layer 3 switch. If the student tried to access the GUI on controller 5 from this PC, would s/he be successful? *

- a. Yes
- b. No
- c. None of the above

* uses DG

13. An office network includes 3 Dual Radio APs. An Employee SSID is advertised on both radios of all APs. A visitor SSID is advertised on the 2.4GHz radio of all APs. How many BSSIDs are there? *

- a. 3
- b. 6
- c. 9
- d. 12
- e. None of the above.

$$3 \times 6 = 18$$

$$18 \div 2 = 9$$

$$= 9$$

$$\text{SSID} \times \text{Radios} \times \text{APs}$$

$$1 \quad 2 \quad 3 =$$

$$1 \quad 1 \quad 3 =$$

14. Which of these frequencies has the longest wavelength? *

- a. 5 GHz
- b. 252 GHz
- c. 2.4 GHz
- d. 750 KHz
- e. Wavelength is not related to frequency

- 15. How many nonoverlapping channels are there for the 802.11b standard? (a) 3
b. 4
c. 6
d. 11
e. 15
- 16. At which OSI layer or layers does a wireless AP operate? (b) Layers 1 and 2
a. Layer 1
c. Layer 2
d. Layers 2 and 3
- 17. In a WLAN, what is the purpose of the common DS? (b) to allow communication between multiple BSSs thereby allowing mobile devices to roam without loss of connectivity
a. to eliminate the need for connectivity to a wired network
c. to reduce the number of APs needed to provide reliable connectivity while roaming
d. to eliminate the need for station addressing when in roaming mode
- 18. The IEEE 802.11 working group provides certification paths for Wi-Fi equipment. (b) False
a. True
- 19. Which organization is responsible for interoperability testing of 802.11 equipment? (c) WiFi Alliance
a. IEEE
b. IETF
d. ISO
e. None of the above
- 20. How many SSID Profiles may be contained in a single Virtual AP Profile? (d) 1
a. 16 or less
b. 2
c. None
e. 1 or more
- 21. Which 802.11 frame is used by all stations to verify delivery of a unicast frame? (d) ACK
a. 802.11 frame delivery is not verified
b. Unicast frames are not verified
c. TCP/IP does this
e. None of the above

22. In the lab (T115), wireless clients receive their IP configuration via DHCP. Where is the DHCP server located?
- In the AP
 - In the Windows server (same as Radius server)
 - In the Controller
 - In the Layer 3 switch
 - None of the above
23. The output of the Aruba **show user** command lists the phy type as **g-HT**. What does this mean?
- The user's connection is 802.11g with HT enabled ✗
 - The User's connection is 802.11n on the 2.4 GHz band ✗
 - The User's connection is 802.11n on the 5 GHz band
 - The User's connection is 802.11ac on the 5 GHz band
 - The user's connection is 802.11g ✓
24. In the 802.11 CSMA/CA method of media access, how does a station know that a collision has occurred? [▲]
- The sending station does not receive a MAC-level acknowledgment
 - The receiving station sends a MAC-level acknowledgment
 - The Auto-Transmit data rate will fall back when data delivery is unsuccessful ✗
 - The media is monitored prior to the transmission so that collisions do not occur ✗
 - A station will not transmit until its NAV timer reaches zero - no collisions will occur ✗
25. When does a wireless station update its NAV Timer? [▲]
- When it sees a frame with a higher value
 - After receiving an ACK
 - When it reaches zero
 - Before it transmits a frame
 - None of the above
26. Which Encryption Algorithm is used by WPA2-Enterprise? [▲]
- AES
 - PSK
 - RC4
 - TKIP
 - None of the above
27. How many VAPs may be contained in a single AP Group? [▲]
- 2
 - No more than the total number of physical APs ✗
 - 1
 - VAPs are not placed in AP Groups. ✗
 - 1 or more
28. What is more than one BSS connected to a wired LAN called? [▲]
- Basic Service Set ✗
 - Extended Service Set
 - Independent Basic Service Set ✗
 - Extended Basic Service Set ✗
 - None of the above ✗
- BSS - ESS
use DS/Ethernet

Users
 ↳ Roles
 ↳ Policies
 ↳ Rules

29. Select the correct order. ✖
- Users, Roles, Policies, Rules
 - Rules, Roles, Policies, Users
 - Policies, Users, Roles, Rules
 - Roles, Policies, Users, Rules
 - Users, Policies, Roles, Rules
30. A laptop computer, which only supports the 2.4 Ghz band, is trying to connect to a particular SSID using active scanning. How many Probe Request frames will it transmit? ✖
- 1
 - 3
 - 6
 - 11
 - 0
- 11 Channels, so it sends 11 "hello's"
31. What is the maximum number of APs a wireless client can be associated with at one time? ✖
- 1
 - 2
 - 16
 - There is no limit
 - Not enough information to answer
32. All APs in an ESS are on the same channel. ✖
- True
 - False
 - All of the above
 - None of the above
33. Consider the following policy.

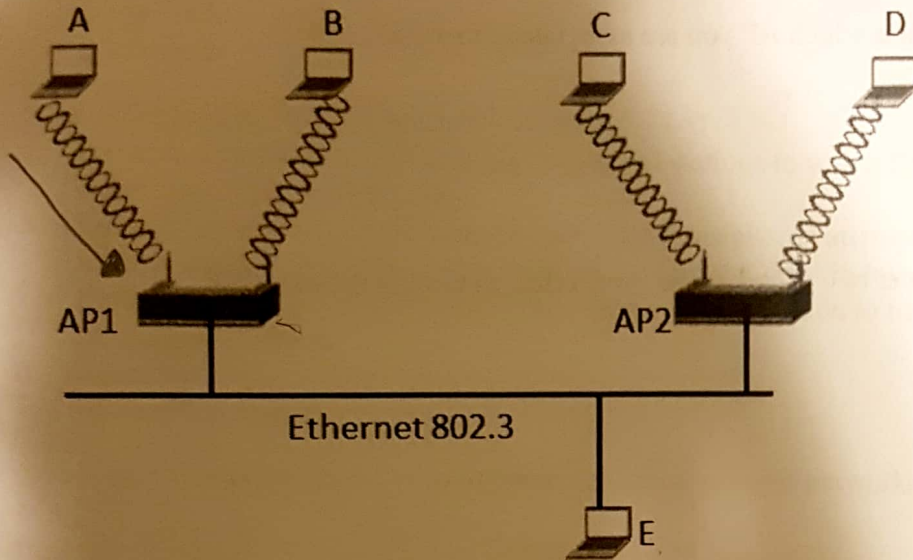
```
ip access-list session "GuestPolicy"
alias Guest-user any svc-dns allow
alias Guest-user any svc-http allow ←
alias Guest-user any svc-https allow
alias Guest-user alias internal-network any deny
```

Which of the following is true?

- Guest users will be able to access a web server on the internal network.
- Guest users will have no access to the internal network. ✖
- Guest users will not be able to send any wireless frames. ✖
- Guest users will have full access to the internal network.
- None of the above ✖

Questions 34 - 37

A frame is sent from laptop A to Laptop E (see diagram below). Access Point 1's SSID is OFFICE1 and Access Point 2's SSID is OFFICE2. Both Access Points are autonomous.



Device	Pseudo MAC Address
Laptop A	AAA
Laptop B	BBB
Laptop C	CCC
Laptop D	DDD
Laptop E	EEE
Access Point 1	111
Access Point 2	222

34. How many ACK frames will be generated as a result of the frame travelling from Laptop A to Laptop ^E~~B~~?

- a. 0
- b. 1
- c. 2
- d. 3
- e. 4

35. When the frame leaves laptop ^BA, what are the Receive, Transmit and Address 3 pseudo MAC addresses?

- a. Receive = 111, Transmit = AAA, Address 3 = EEE
- b. Receive = EEE, Transmit = AAA, Address 3 = 111
- c. Receive = AAA, Transmit = EEE, Address 3 = 111
- d. Receive = AAA, Transmit = 111, Address 3 = EEE
- e. None of the above

R - 111
T - AAA
A - EEE

36. When the frame leaves AP1, what are the Source and Destination pseudo MAC addresses?

- a. Source = 111, Destination = EEE
- b. Source = AAA, Destination = EEE
- c. Source = 111, Destination = AAA
- d. Source = EEE, Destination = AAA
- e. None of the above

R - EEE
T - 111
A - AAA

37. How many BSSIDs do you see in the table beside the diagram?

- a. 1
- b. 2
- c. 3
- d. 4
- e. 5

MAC Address
111 & 222

38. A _____ indicates which AP you are associated (connected) to.

- a. SSID
- b. BSSID
- c. IBSS
- d. ESSID
- e. None of the above

Basically, it's the MAC address of your AP

39. Setting an AP's transmit power to 0 dBm has the same effect as turning the radio off.

- a. True
- b. False
- c. None of the above

mW	dBm
10	10
2	3
\times	$+$
\div	$-$
1	0
$\div 10$	-10
$\div 2$	-3
0.05	

40. Convert .05 mW to dBm

- a. -23
- b. -13
- c. 3
- d. -9
- e. -15

mW	dBm
10	10
2	3
\times	$+$
1	0
$\times 10$	+10
$\div 2$	-3
5	7

-13

41. Convert 7 dBm to mW.

- a. 6
- b. 5
- c. 8
- d. 13
- e. 4

42. Select the best definition of Attenuation.

- a. The reduction of the amplitude of a signal.
- b. The reduction of the frequency of a signal.
- c. The act of transmitting a wireless signal.
- d. A measure of antenna gain.
- e. A measure of antenna loss.

43. A captured 802.11 frame has both the ToDS and FromDS bits set to 0. Therefore, we know that..

- a. the frame is being sent from an AP to a user.
- b. the frame is being sent from a user to an AP.
- c. the frame is being sent from a user to another user.
- d. the frame is not valid since the ToDS and FromDS bits cannot both be 0.
- e. none of the above is correct.

	To DS	From DS
TO AP	0	0 *
From AP	1	0
b _s - b _s	1	1

44. A network's APs are configured to send 10 beacons per second. A wireless client with a 2.4 GHz radio is using passive scanning to connect to the network. Approximately how long will it take to scan for a suitable AP?

- a. .011 seconds
- b. 11 seconds
- c. 1.1 seconds
- d. 0.1 seconds
- e. 0.3 seconds

No clue !!!

45. What is the purpose of the Contention Window?

- a. Prevents transmission collisions by forcing all stations to wait a fixed period of time called the Contention Window.
- b. Prevents transmission collisions by spreading transmission attempts from multiple wireless stations over time interval called the Contention Window.
- c. Prevents transmission collisions by allowing only one station to transmit during the Contention Window.
- d. All of the above
- e. None of the above

46. Which type of authentication is most commonly used in home networks?

- a. PEAP
- ✓ b. PSK
- c. Open
- d. MAC
- e. None of the above

PSK - personal

47.

(Controller??) #show user-table

Users

IP	MAC	Role	AP name	Roaming	Essid/Bssid/Phy	Profile
10.1.241.11	b4:b6:76:e2:70:66	authenticated	Shawn's AP	Wireless	OpenNet/d8:c7:c8:e2:9a:20/g-HT	open-aaa-pro

#24

The show user-table command was issued on which controller?

- a. Controller 1
- b. Controller 20
- c. Controller 11
- ✓ d. Controller 24
- e. Not enough information to know which controller.