

ITS413 – Quiz 3X Answers

Name: _____

ID: _____

Mark: _____ (out of 5)

Question 1 [1 mark]

- a) The initial size of the contention window from which backoff slots are chosen in 802.11g DCF is $CW_{min} = 15$. If CW_{min} was set to 7, the number of collisions in a WLAN would:
Decrease Stay the same **Increase**
- b) The initial size of the contention window from which backoff slots are chosen in 802.11b DCF is $CW_{min} = 31$. If CW_{min} was set to 15, the number of collisions in a WLAN would:
Decrease Stay the same **Increase**
- c) The initial size of the contention window from which backoff slots are chosen in 802.11g DCF is $CW_{min} = 15$. If CW_{min} was set to 31, the number of collisions in a WLAN would:
Decrease Stay the same Increase
- d) The initial size of the contention window from which backoff slots are chosen in 802.11b DCF is $CW_{min} = 31$. If CW_{min} was set to 63, the number of collisions in a WLAN would:
Decrease Stay the same Increase

Answers

With a smaller value of CW_{min} , the shorter the backoff interval will be and hence the higher chance that two stations select the same backoff leading to a collision.

Question 2 [1 mark]

Consider a WLAN BSS connected to an Ethernet network. If a WLAN client sends a frame to a PC on the Ethernet network, then the frame will contain the addresses of which devices?

Answer

WLAN client, PC, AP

Consider a WLAN BSS connected to an Ethernet network. If a PC on the Ethernet network sends data to a WLAN client, then the frame sent via the AP containing that data will contain the addresses of which devices?

Answer

WLAN client, PC, AP

Consider two WLAN BSS's connected in an ESSID, where the APs are connected via Ethernet. If a WLAN client 1 on one BSS (AP1) sends a frame to another WLAN client 2 on the other BSS (AP2), then the frame will contain the addresses of which devices?

Answer

WLAN client 1, AP1, WLAN client 2.

Question 3 [1 mark]

Describe the active approach for a client to discover an AP in a WLAN. Your description should refer to the frame types used, who sends them and who they are sent to.

Answer

In the active approach, a client broadcasts a Probe Request frame. If an AP receives this frame, it may respond with a Probe Response. From the response, the client has discovered the AP.

Describe the passive approach for a client to discover an AP in a WLAN. Your description should refer to the frame types used, who sends them and who they are sent to.

Answer

In the passive approach, an AP regularly broadcasts a Beacon message. When a client receives a Beacon message (from an unknown AP), the client has discovered the AP.

Question 4 [2 marks]

Fill in the blank spaces:

- In the Internet (before Mobile IP was developed), the problem with mobility is if a host changes subnets without changing IP addresses then **routing** will not work.
- In the Internet (before Mobile IP was developed), the problem with mobility is if a host changes subnets and also changes IP addresses then some **applications** will not work.
- In Mobile IP, every mobile host has a **Home Agent**, whereas the networks it visits must have **Foreign Agents**.
- In Mobile IP, a visiting mobile host is assigned a **Care-of-address**, but still has its **Home IP** address.
- When a Mobile IP host is visiting a network, the **Home Agent** will forward traffic to the hosts **Foreign Agent**.
- When a Mobile IP host enters a foreign network, the host must **discover** the Foreign Agent and then **register** with its Home Agent.