

ITS 413 – QUIZ 2 ANSWERS

First name: _____ Last name: _____

ID: _____

Total Marks: _____

out of 10

Question 1 [2 marks]

Explain two reasons why the frequency of a wireless network is an important design consideration.

Answers

Cost – Some frequencies are licensed (and expensive) and others are unlicensed and free to use

Data Rate – generally a higher bandwidth (available at higher frequencies) can lead to higher data rates.

Interference – Some frequencies may have many other transmitters, leading to a lot of interference; others (especially licensed), interference can be minimised.

Operating environment (and transmission range) – some frequencies can travel a larger distance than others, and are affected by obstructions in different ways.

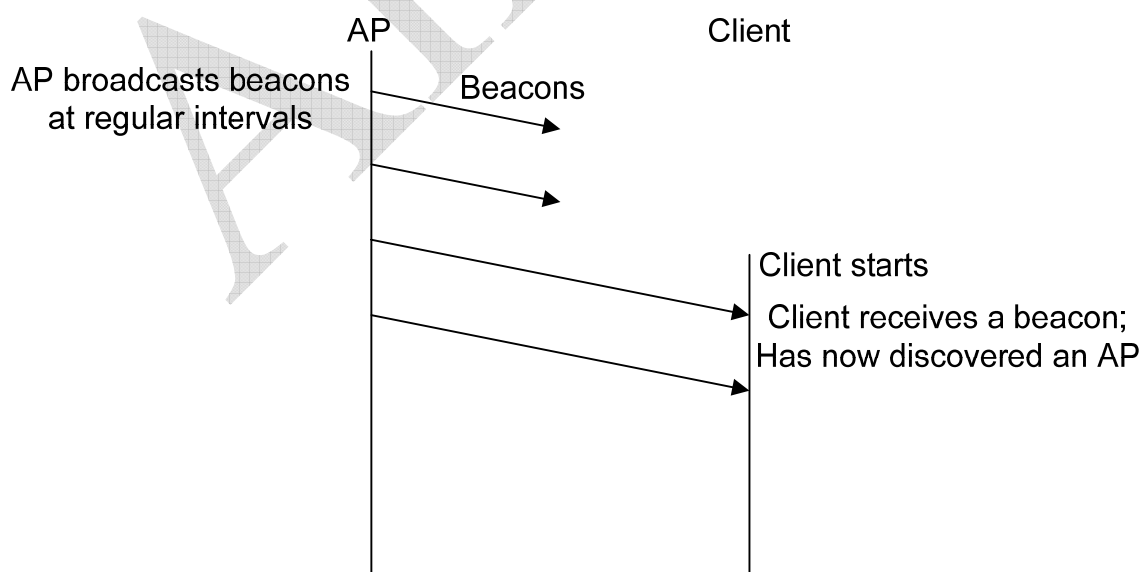
Question 2 [4 marks]

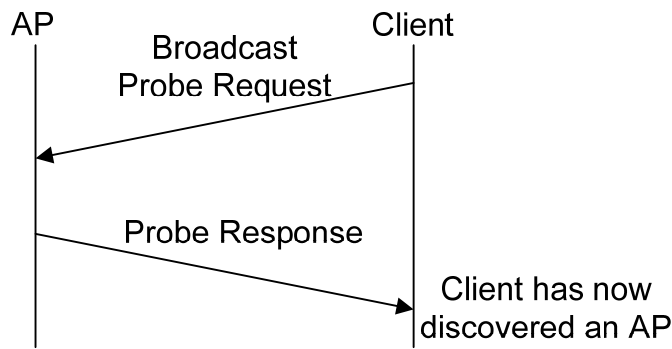
What are the two methods that a wireless LAN client can use to discover an Access Point? Use a diagram to illustrate the two methods.

Answer

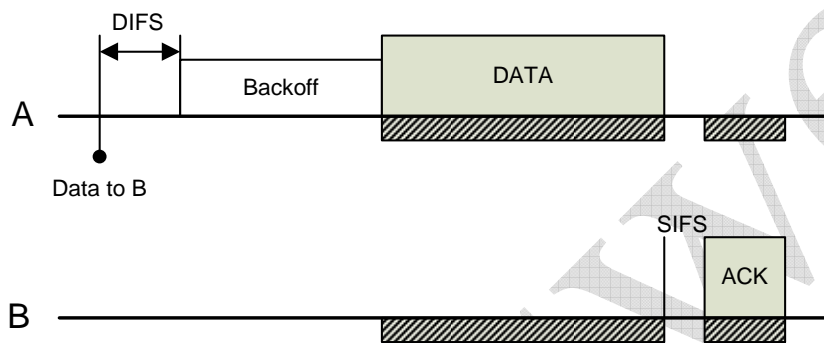
Passive Discovery – Beacons

Active Discovery – Probe Request/Response



**Question 3** [2 marks]

Draw a diagram illustrating the IEEE 802.11 DCF basic access transfer method from one station to another. You may ignore any deference, collisions and retransmissions. Make sure you label the steps/frames.

Answer**Question 4** [1 mark]

If a router on a switched Ethernet LAN has a packet to forward to a wireless LAN client, and the Ethernet LAN and wireless LAN are attached by an AP, the MAC addresses of which devices will be included in the IEEE 802.11 frame received by the client?

Answer

Router MAC address

AP MAC address

Client MAC Address

Question 5 [1 mark]

Explain a *collision* in a wireless network.

Answer

A collision is an event that occurs when two (or more) transmitters send a frame that overlap in time at the receiver. That is, the receiver receives two frames at the same time. The two frames *collide*, and in most cases, the receiver cannot successfully receive either of them.