

**CS433I/533I: Wireless Networks and Mobile Computing**  
**Fall 2021**

**Quiz #2 Solution**

- Full name only: \_\_\_\_\_
- Release date: Sept 15th, 2021 (Wednesday)
- Closed book/note; No electric device; No discussion/chatting; This should be done individually.
- Total 10 points;

1. What is a handoff operation?

[1 pt]

- Transferring an active connection (e.g., on-going connection) from one cell in a cellular network to the next visiting cell.

2. What advantage does a circuit-switched network have over a packet-switched network?

[1 pt]

- A circuit-switched network can guarantee a certain amount of end-to-end bandwidth for the duration of a call/communication – without sharing.

3. [True or False] In wireless networks, a sender equipped with an omni-directional antenna transmits a unicast packet but its adjacent nodes can also overhear it.

[1 pt]

- True.

4. A signal has a fundamental frequency of 1000 Hz. What is its period in terms of second (sec) – the duration of time of one cycle?

[1 pt]

- Period =  $1 / 1000 = 0.001$  sec

5. [True or False]: Network core devices (e.g., router) run user application code.

[1 pt]

False

6. [True/False] A reliable network protocol can guarantee data delivery from source to destination.

[1 pt]

- False

7. What is (are) the potential problem(s) in layering?

[1 pt]

- one layer may duplicate low-layer functionality; functionality at one layer may need information in another layer - violate the goal of separation of layers

8. [True/False] As the radio frequency signal's power changes logarithmically, the dBm value changes linearly.

[1 pt]

- True

9. How many bits are in a MAC address and a IPv4 address, respectively?

[1 pt]

- 48 bits and 32 bits.

10. What is the goal of multiplexing techniques?

[1 pt]

- How several users can share a medium with minimum or no interference