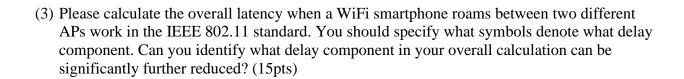
## Homework #2 for CSE824 Due Date: 11:59pm EST, October 13, Tuesday, 2020 Online submission (D2L)

Name:	Solution
Student ID: _	
•	<b>ple Choices):</b> For each question, please select the correct answer(s) out of the be multiple correct choices in a question), each question (5pts).
Your choice: _ (A) wireless s	uses an ad hoc, but NOT the cellular-like infrastructure?  nsor networks; (B) Wi-Fi AP operation mode; (C) 2G/3G wireless networks beer-to-peer mode.
Your choice: _ (A) opportuni	of applying the adaptation guideline over wireless mobile networks?  tic design approach; (B) protocol layering; (C) end-to-end design argument renced adaptation.
Your choice: (A) Mobile II (ACK) for evo	based roaming between different subnets; (B) sending an acknowledgmentry DATA received with success; (C) RTS-CTS is used to handle the hidder (D) roaming among different APs in the same subnet.
Your choice:(A) both the new	twork core and terminals are smart; (B) prioritize goals given a list of multiple it switching to provide guaranteed service; (D) end to end argument.
banning access to network setting, w Your choice: (A) Thick AP	ture choice you select when enabling application-driven traffic filtering (say Facebook or CNN website during working hours in the enterprise WiFinile ensuring minimal cost for the overall WiFi network?  without AP controller; (B) Thin AP without AP controller; (C) Controllerless
-	without the cloud service; (D) Thin AP with AP controller. rinciple(s) does the Internet design NOT use?

(A) "smart terminal, dumb core" approach; (B) "smart core, dumb terminal" approach; (C) placing the intelligence at the physical layer rather than upper layers; (D) keep perconnection state at routers inside the network core.
(7) Which is NOT true for wireless and mobile networks?
Your choice: (A) A main challenge is the wireless link issue; (B) Another main challenge is the mobility issue; (C) A main driver for wireless networking design is new wireless communication technologies; (D) A main driver for wireless networking design is new applications and services; (E) Wireless networks can use the same protocols as the wired Internet.
(8) Which issues need to be addressed when applying adaptation guideline? Your choice:
(A) How many scenarios or cases to handle; (B) when to invoke adaptation; (C) how to perform specific adaptive actions for each case; (D) no need to evaluate adaptation since adaptation is always good and helps to improve performance.
<b>Problem 2 (Short answer):</b> Please <i>briefly</i> answer each question.  (1) Some companies want to move the service support for mobile devices (smartphones and tablets) entirely to the Internet cloud servers. Does this violate the end-to-end argument for Internet design since the service complexity is moved away from the end host but shipped to the cloud? (15pts)
(2) Describe why opportunistic design can help to achieve higher performance gain. You can use an example to illustrate your point. (15pts)



(4) If you have two wireless channels to use (one with high data rate of 100Mbps, the other with only 300Kbps data rate) at each node (i.e., the node has two wireless transceivers, one for each channel), can you design a better wireless MAC protocol within the CSMA/CA paradigm? The efficiency is defined with respect to both wireless medium access and energy efficiency (i.e., how to maximize power savings at each node). We assume that 300Kbps data rate channel uses much less power than 100Mbps data rate channel. Please briefly justify why your designed MAC solution can outperform the conventional 802.11 MAC which only uses a single channel. Hint: better select channels to transmit RTS, CTS, DATA, and ACK. (15pts)