



CSE3213 Communication Networks, Winter 2010

Section: M

Instructor: Foroohar Foroozan

Time Allowed: **15 minutes**

Quiz 4

Student Name: _____

Student Number: _____

1. Slotted Aloha [2 point]

Measurements of a slotted ALOHA channel with an infinite number of users show that 10% of slots are idle. What is the channel load, G ? Is the channel overloaded or underloaded?

Answer:

From the given information $P_{\text{success}} = P_{\text{finding an empty slot}} = 0.1 = e^{-G}$

Hence $G = -\ln 0.1 = 2.3$

Whenever $G > 1$, the channel is overloaded.

$S = G * e^{-G} = 2.3 * e^{-2.3} = 0.23$

2. Vulnerable Time [1 point]

Can you explain why the vulnerable time in Aloha depends on T_{frame} , but in CSMA depends on T_{prop} ?

Answer:

Has been discussed in the class.