

# CS1356 Introduction to Information Engineering

## Quiz 7, 2010/11/14

Your name \_\_\_\_\_ Student ID \_\_\_\_\_

1. Briefly answer the following questions. **-30%**

- a. In the four-layer network model mentioned in class, when a message is received by a host machine, which order of those four layers does it go through?

Ans: **Link layer -> Network layer -> Transport layer -> Application layer**

- b. What is a “packet”? Which layer of the Internet software should know the sequence numbers of packets?

Ans: **Packet is a small segment of data as transmitted on network.**

**Transport layer should hold the sequence numbers of packet**

- c. What is hidden terminal problem? What would happen if the “request” messages collide?

Ans: **“Hidden terminal problem”** is that the signals from the different machines are blocked from each other by object or distance even though they can all communicate with the central AP.

**When AP is busy dealing with the hidden terminal problem, AP will ignore all the requests, and the requesting machine will know to wait.**

2. True or false. If the sentence is false, give the correct description. **-50%**

- a. It is the transport layer’s job to decide which direction a packet should sent.

Ans: **False. it is the network layer’s job to decide which direction a packet should be sent.**

- b. CSMA/CD is compatible with wireless star network.

Ans: **False . CSMA/CA is compatible with wireless star network.**

3. Supposed a cable’s bandwidth is 16Kbps. How fast can a 5MB data be transmitted over the cable?(Using 1M=1024K) **-20%**

Ans:

$$16\text{Kbps} = 16\text{K-bit/second} = 2\text{K-Byte/second}$$

$$5\text{MB} = 5 \times 1024\text{KB} = 5120\text{KB}$$

$$\therefore 5120(\text{KByte}) \div 2(\text{KByte/sec}) = \underline{2560 \text{ second}} = \underline{42\text{min } 40\text{sec}}$$