

# Introduction to Computer Science

## Homework#5

#1

What are some differences between a transport layer based on the TCP protocol and another based on the UDP protocol?

#2

What is DNS?

#3

Express the bit pattern 0001010100011100 using dotted decimal notation (IP address).

#4

What is a router?

#5

What happens when two nodes using the CSMA/CD encounter a collision in the network?

#6

What bit pattern is represented by each of the following dotted decimal patterns

- a. 8.12.20.13
- b. 10.1.1.250
- c. 140.112.18.29
- d. 140.109.50.45

#7

List the four layers in the Internet software hierarchy and identify a task performed by each layer.

#8

In what way could TCP be considered a better protocol for implementing the transport layer than UDP? In what way could UDP be considered better than TCP?