AAST College of Computing and Information Technology

Network Protocols (CS422)

Spring 2014

Homework 2 (Total of 40 pts)

Due on April 6th, 2014

No late submissions will be allowed

Q1. (5 pts) A subnet mask in class A has fourteen 1s. How many subnets does it define?

Q2. (10 pts) "On a network that uses NAT, an external host can initiate communication with an internal host (behind the NAT router)". Comment on the validity of this statement explaining your answer.

Q3. (5 pts) Suppose there are 3 routers between source and destination hosts. Ignoring fragmentation, an IP segment sent from source host to destination host will travel over how many interfaces? How many routing tables will be indexed to move the datagram from source to destination?

Q4. (10 pts) In a class B subnet, we know the IP address of one of the hosts and the mask as given below

IP address:	128.134.112.66
Mask:	255.255.224.0

What is the subnet address?

Q5. (10 pts) Consider sending a 2500 byte datagram into a link that has a MTU of 500 bytes over an IPv4 network. Suppose the original datagram is stamped with the identification number 425. How many fragments are generated? What are their characteristics (specifically, what are the values for the following fields in the IP header of every fragment: total length, identification, MF flag, and offset)?

What to Submit?

- Please submit a hard copy to your TA during section time.