TUT/TITE/JH
TLT-2600/2606 Verkkotekniikan jatkokurssi/Advanced course on networking
Exam 6.4.2010

Finnish students (students of TLT-2600) may answer in Finnish.
You can get a maximum of 6 points from each question, i.e., a total of 24 points. Typically at least 10 points are needed to pass the exam.

1.   a) What is meant by *exterior* and *interior* routing protocols? (2p.)

    b) Why is it not possible for e.g. OSPF to act as an exterior routing protocol, or BGP to act as an interior routing protocol? More generally, why is an exterior routing protocol typically not suitable for an interior routing protocol, and vice versa? (2p.)

    b) How do exterior and interior routing protocols cooperate? (2p.)

2.   a) Briefly describe the concept "Network Address Translation (NAT)". How does it differ from Network Address Port Translation (NAPT)? Use a figure to illustrate your description. (2p.)

    b) For what purpose was STUN developed, and what kind of equipment is needed to utilize STUN? (2p.)

    c) Explain in detail how STUN can help a terminal determine whether it is behind a symmetric NAT (also called Endpoint dependent mapping in NAPT) or not. (2p.)

3.   a) How does BGP differ from a distance vector routing protocol like RIP? (3p.)

    b) Explain the basic structure and usage of the databases maintained by BGP. (3p.)

4.   a) Explain the term "Hot potato routing". Use a figure to illustrate your explanation. (2p.)

    b) Explain briefly the differences of the protocol mechanisms used in dense mode and sparse mode multicasting. (2p.)

    c) What is the triangle routing (aka dogleg routing) in Mobile IPv4, and what kind of problematic issues are related to it? (2p.)