Högskolan i Halmstad
Sektionen för Informationsvetenskap, Data- Och Elektroteknik (IDÉ)
Olga Torstensson

Written Exam in
Multilayer Switching
21 May, 2008

Allowed aid in addition to the attached formulae:
Writing material.

Welcome to the exam!

READ THIS FIRST:
Motivate all answers. Insufficient motivation can give reduced points even if the answer
is correct. If required, you are allowed to make own (reasonable) assumptions. You are
allowed to answer in either ENGLISH or SWEDISH but do not mix languages in the
same answer.

GOOD LUCK!

Number of exercises: 10
Maximal number of points: 60

The grade limits 30p to pass the Exam (Grade 3), 42p for Grade 4 and 54p for Grade 5.

Assignment 1: Select one of two (12 p)

Choose **one** of the following assignments. Appropriate length of an answer/description is 1-2 pages including figures. Write clear and concise. It's more important that what you write is coherent, logical and correct than everything in the subject being included. In other words, it's more important to show that you have an overall understanding than to just mention a lot of less important details. Please use examples when appropriate.

A. QoS

B. Multilayer Switching

Assignment 2: DiffServ and IntServ (8p)

Describe and compare DiffServ and IntServ. Explain advantages and disadvantages of both. When and why should we use DiffServ and IntServ ?

Assignment 3: STP (5p)

Explain Spanning Tree Protocol. How it works? Which enchantment can be used in STP? Name it and describe short.

Assignment 4: VLAN(5 p)

Name main advantages to use VLAN. Describe main features of 802.1Q.

Assignment 5: Redundancy (5p)

What are the purposes of using redundancy protocols in the network? Which redundancy protocols can be used in the LAN? Explain the differences between these protocols.

Assignment 6: QoS   (5p)
How work classification and marking? Describe Layer2 and Layer3 marking mechanism.

Assignment 7: QoS   (5p)
Name main types of Queuing policy options. Compare different types of Queuing options.

Assignment 8: QoS(5p)
Which factors influence encapsulation overhead and needs for extra bandwidth in VoIP network?

Assignment 9: WLAN(5p)
Why and what require WLAN Security ? How can be protected WLAN ?

Assignment 10: WLAN(5p)
Explain the difference between   two access methods DCF (Distributed Coordinator Function) and PCF (Point Coordinator Function) in IEEE 802.11.