

Test 1: NET3011 – Advanced Switching

Winter 2013

Time: 50 minutes; Test scored out of: 45 Total Marks available: up to 48
(Allocation of marks is shown beside each question)

Instructions:

1. **BEFORE** answering any questions, please check that your copy of the test has all pages (as indicated in the footer at the bottom of each page). Please read all questions carefully, then answer question 0 first!
2. This is a **closed book** test. No textbooks, notes, electronic devices, or any other aids are permitted. (The only exception is ASL interpreters.)
3. If you are uncertain what a question is asking, make reasonable assumptions, write those assumptions down on this test paper, and continue answering the question.

0. What is your:

NAME? _____

(Continued on next page)

5. [6 marks] Name and **clearly** describe the VTP modes (available on our lab equipment): what can/will they do, and what can/will they not do? Ref: Ch2-VLAN-2, slide 26
6. [5 marks] **Clearly** define and distinguish the terms: *default VLAN*, *Native VLAN*, *Management VLAN*, *User VLAN*, and *Blackhole VLAN*. Be sure to include some relevant protocols and any specific VLAN numbers in your definitions.
7. [2 marks] Name and give a **clear**, brief description of the two kinds of algorithms which are used in Etherchannel (ie. for choosing which link to use). When is each one used?

8. [3 marks] Name and give a **clear** 1-2 line description of at least six L2 protocols that we have referenced in this course. [1 mark per pair correct protocols]
9. [3 marks] A frame generated by a host arrives on switch port fa0/1, which is configured in access mode, and then leaves the switch on a trunk port. Draw a **pair** of **clear** diagrams that show the frame **before** and **after** passing through the switch, highlighting any fields that have changed, been added or deleted.
10. [2 marks] We have seen that **four** commands are required to capture the complete configuration of a switch. What are the exact commands? [1 mark per correct pair]
11. [2 marks] In the lab, the output of "**sh span**" shows: **Root ID Priority 100**
Clearly explain (or give commands for) the configuration necessary to obtain that priority.

12. [4 marks] **Clearly** state and/or explain at least 4 Best Practices for VLAN design.
[Ref: Ch2-VLAN-1 slide 8]
13. [2 marks] **Clearly** explain reasons why Etherchannel load balancing may **not** distribute frames evenly across all links.
14. [1 marks] What is VTP pruning? **Clearly** describe (explain) it.
15. [2 marks] After successfully clearing and resetting one of our lab switches, an admin configures two VLANs. What would "`sh vtp status`" display for the Configuration revision number and total number of VLANs? Explain.

16. [2 marks] **Clearly** identify all the conditions under which DTP will successfully create a trunk link. Include the **exact** names of any relevant modes.
17. [2 marks] **Clearly** identify all the conditions under which LACP will create an aggregated link. Include the **exact** names of any relevant modes.
18. [Up to 3 marks] Pick your favourite question from **last year's** midterm that is not on this midterm. Write that question **clearly** and provide the **correct** answer. [Max 3 marks, using the same marking scheme as last year.]