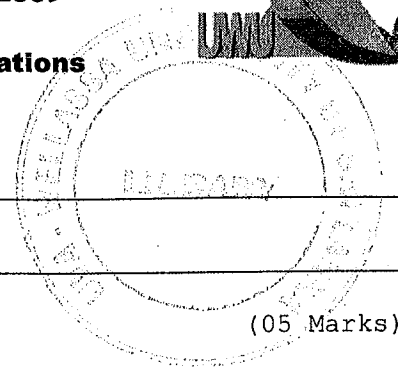


**Uva Wellassa University, Sri Lanka**  
**End Semester Examination – December 2009**

**CST451-1 Advanced Networking & Applications**

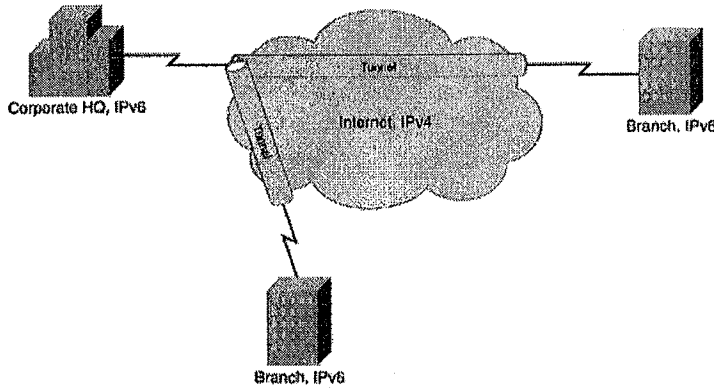


Time: One (01) Hour

**Answer all questions.**

**1)**

- a) What is Network Address Translation (NAT)? (05 Marks)
- b) Consider the IPv4 address 192.168.10.20
  - i) Write above address in IPv6 standard notation (03 Marks)
  - ii) Write above address in IPv6 compressed notation (02 Marks)
- c) Explain IP multicast in IPv6 (05 Marks)
- d) What is the IPv4 loopback address? (02 Marks)  
 What is the IPv6 loopback address? (03 Marks)
- e) An organization has moved to IPv6 addressing. The corporate office is connected to the two branch offices through the Internet, as shown in the figure.



What tunneling type is this organization using? (05 Marks)

**2)**

- a) What is a Virtual LAN (VLAN)? (03 Marks)
- b) State two (2) advantages which can be achieved by employing VLANs (04 Marks)
- c) Why not subnet the network, instead of using VLAN's? (03 Marks)
- d) Consider the IP address range starting from 200.200.0.0. There are three (3) companies P, Q and R which request 5000, 2000 and 7000 addresses respectively. For each of the company IP allocations, give the first IP address, the last IP address and the network mask. (15 Marks)

Company	First IP Address	Last IP Address	Subnet Mask
P			
Q			
R			

3)

**Instructions**

Login to the university Course Management System (CMS) and download the CST451-1\_EXAM.pka file. After completing the activity, save the answer file and upload it again to the Course Management System.

(50 Marks)

This network consists of 3 Switches, 3 Servers, 1 PC and 1 Laptop.

- 1) Configure PC1 IP address as follows
  - IP address : 192.168.1.20
  - Subnet Mask : 255.255.255.0
  - Default Gateway : 192.168.1.254
  - DNS Server : 192.168.1.1
- 2) Connect Switch\_0 and Switch\_1
- 3) Connect Switch\_0 and Switch\_2
- 4) Connect DNS\_Server to Switch\_2
- 5) DNS\_Server settings
  - IP address : 192.168.1.1
  - Subnet Mask : 255.255.255.0
  - Default Gateway : 192.168.1.254
- 6) Add following record to the DNS\_Server
  - Name : www.test.lk
  - Type : A Record
  - Address : 192.168.1.2
- 7) Go to the Desktop Command Prompt of the PC1 and ping 192.168.1.1 to check these two devices are connected together.
- 8) Connect Laptop\_0 and Switch\_1.
- 9) Configure Laptop\_0 to obtain an IP address from a DHCP server.
- 10) Go to the Desktop web browser of the Laptop\_0, type the URL **www.test.lk** and check the web page.

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