

**ENCS413: Computer Networks Laboratory**

Final Practical Exam

(100 Minutes)

Wednesday, December 23, 2020

1. Build the topology shown in the Figure1 (5 points)

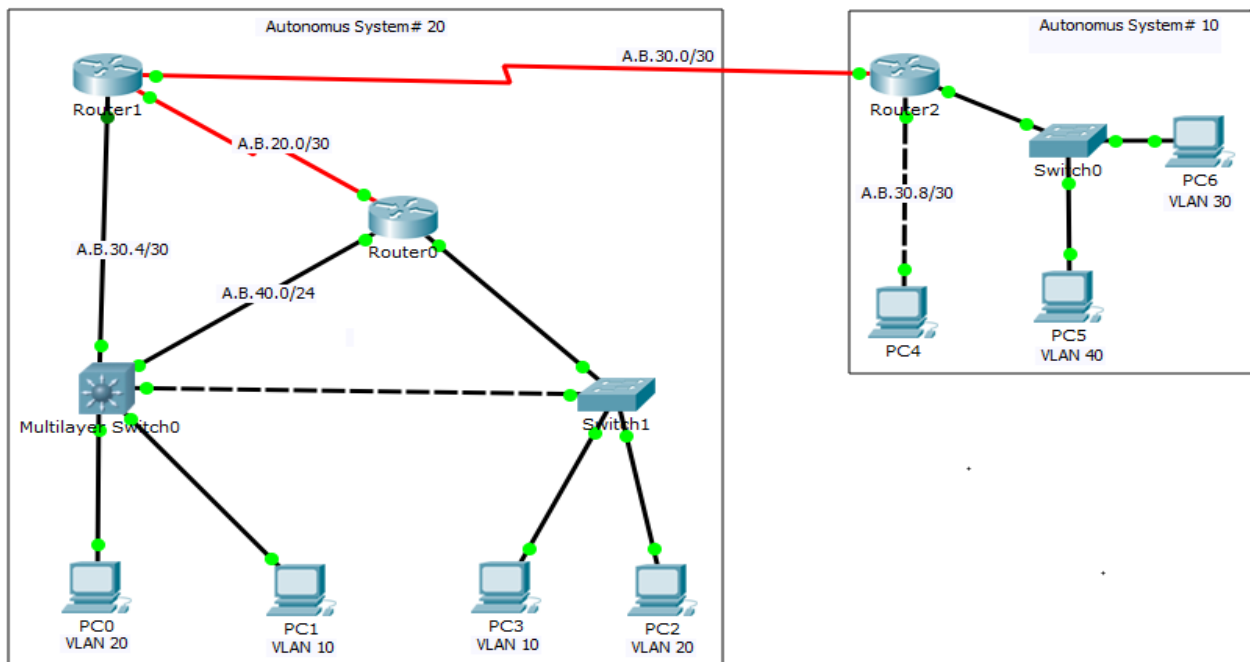


Figure 1: Network topology with two autonomous system.

2. Configure the IP addresses for the PCs and the Routers' interfaces. Replace A and B in each IP address with the last four digits of your university number. (10 points)
- For example, if your university number is 1140302 then: A = 03 = 3, B = 02 = 2.
  - If A or B is equal to 0 then replace it with 1.
3. For VLANs, consider the following configurations: (16 points)
- VLAN10 is in network A.B.50.0/24 and Multilayer Switch0 is the gateway.
  - VLAN20 is in network A.B.60.0/24 and Router0 is the gateway.
  - VLAN30 is in network A.B.70.0/24 and Router2 is the gateway.
  - VLAN40 is in network A.B.80.0/24 and Router0 is the gateway.

4. Configure the following routing protocols: (20 points)
  - OSPF on AS20
  - EIGRP on AS10
  - BGP to connect the two autonomous systems.
  
5. Choose the place of Access-List efficiently to: (10 points)
  - Prevent PC3 from accessing PC5.
  - Prevent PC4 from accessing any device in AS20.
  
6. Configure the two paths between Multilayer Switch0 and Router1 as following: (5 points)
  - The cost of direct path (Multilayer Switch0 - Router1) is 100.
  - The total cost of second path (Multilayer Switch0 - Router0 – Router1) is 40.
  - If PC3 sends a packet to PC5, what is the path that will walk through? Write your answer as a note on packet tracer or take a screenshot for **tracert** command.
  
7. Testing the entire topology functionality: (4 points)

*Good Luck*