Spring 2014
Computer Networks
CMPE323

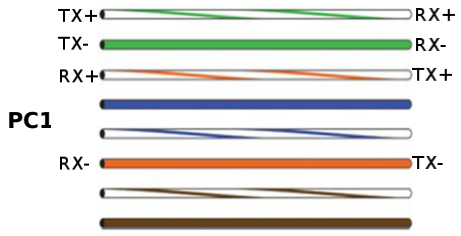
Quiz 1 (2^{nd} Group)

Questions	Points
Q1	/25%
Q2	/25%
Q3	/25%
Q4	/25%
Total	/100%

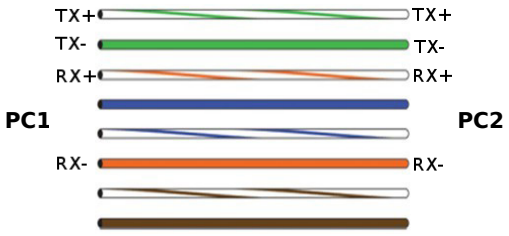
Student name: **Student ID:**

Question 1:

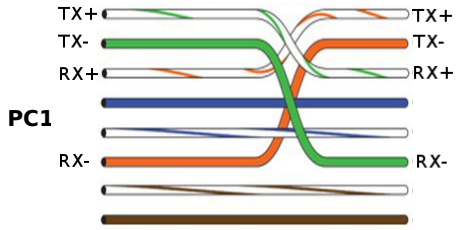
Suppose that we have two PCs (PC1 and PC2) that are directly connected to each other via their Ethernet network adapter, then which one of the following pin-arrangements will allow their connectivity given that Auto-MDIX is disabled:



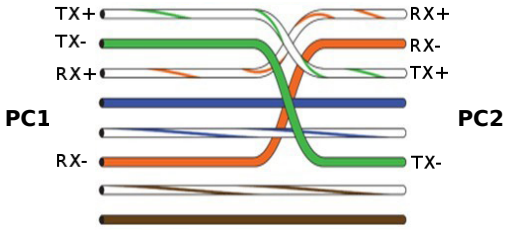
(a)



(b)



(c)



(d)

Question 2:

Considering the single broadcast domain network that is presented in Figure 1, if the Ethernet switch received from its `fa0/2` interface a MAC frame with a destination MAC address of `00:00:00:00:00:02`, which port(s) will the switch forward the frame to?

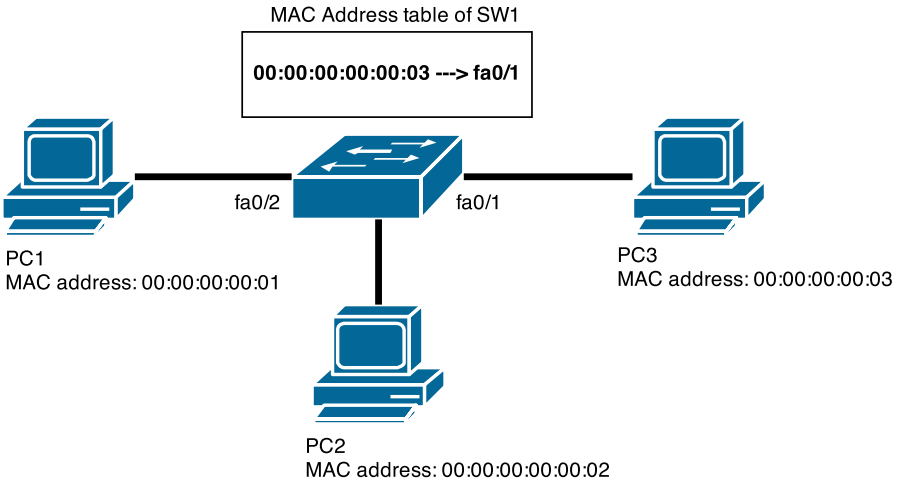


Figure 1: A single Ethernet broadcast domain connecting PC1, PC2 and PC3.

Question 3:

Considering the broadcast domains as presented in Figure 2, if PC1 sends a broadcast MAC frame with the destination MAC address of `FF:FF:FF:FF:FF:FF`, which PC(s) will receive the message?

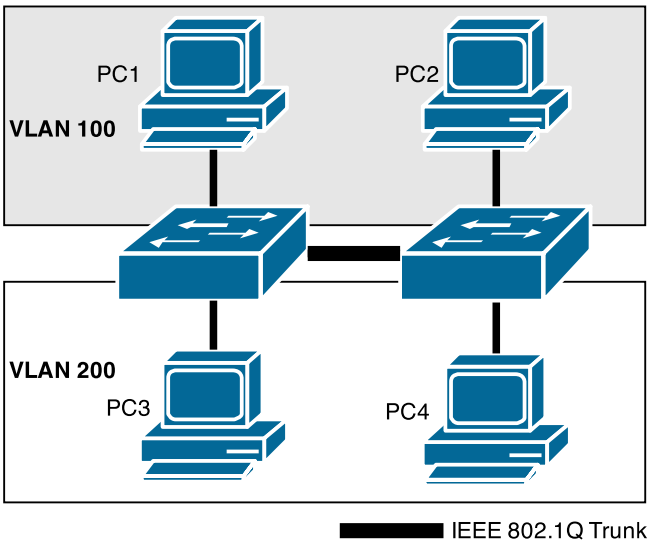


Figure 2: Two separate Ethernet broadcast domains connecting PC1, PC2, PC3 and PC4.

Question 4:

Assuming that all devices (PCs and routers) in IP network as presented in Figure 3 are configured correctly with the exception that R1 is unable to reach the network `10.0.3.0/24`. What entry should be added in R1's routing table in order to solve this reachability issue?

- Network IP address:
- Network subnet mask[1]:
- Gateway[2] IP address:

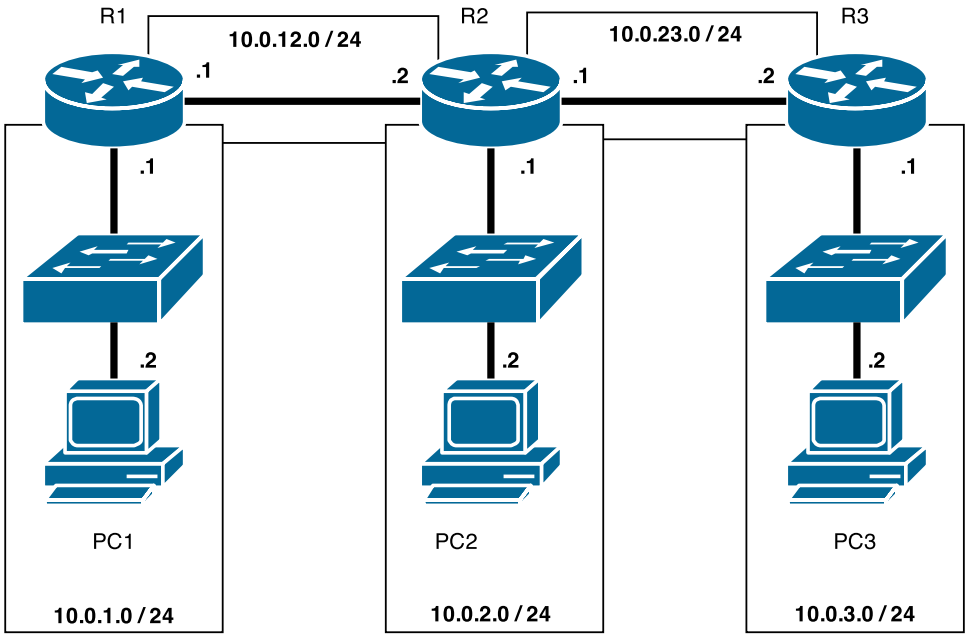


Figure 3: Various Ethernet broadcast domains being inter-connected via 3 IP routers.

[1] You can express it as bits (e.g. /24) or 4-octet addresses (e.g. 255.255.255.0).
[2] Also known as next-hop node.