Air University
Mid Semester Lab Examination: Fall 2021

Subject: - **Computer Networks**
Course Code: -
Class: - **BS-CYS**
Semester: - **3rd**
Section(s): - A

Total Marks: 45
Date:
Time: 12 PM to 2 PM
Max Time Allowed: 2 Hours
FM(s) Name: **Adnan Shah**

Student's Name: **Reg-ID:**

Instructions:

- Each Question contains equal marks
- Task based practical examination
- Compile complete report in PDF format which includes all task screenshot.
- Plagiarism of any kind will result in Zero (0) marks.

CLO 2

(10 marks)
Question 01: For the following IP Addresses, Identify the following:

1) Class (A, B, C, D, E)

2) Network-Host Division (Example: N.N.N.H)

3) Subnet Mask (Example: 255.0.0.0)

1. **139.34.23.1**
2. **219.80.60.110**
3. **24.254.254.254**
4. **10.80.10.1**
5. **100.1.1.1**
6. **122.11.12.22**
7. **166.77.88.80**
8. **34.200.234.12**
9. **193.254.254.254**
10. **200.200.200.200**

CLO 3

(15 marks)

Question 02: Complete the following network in Packet Tracer:

Please take screenshots when all configurations are done and PING is successful.

Network-1:

1. **Add a PC**
    a. **Assign IP address (last 2 digits of student ID for each octet)**
    b. **Example: ID = 201764, IP = 64.64.64.64**
    c. **If last 2 digits of your ID are 00, then assign 100.100.100.100**
2. **Add a Switch (2960)**
3. **Connect the PC to the Switch**
4. **Capture screenshot of the "IP configuration" of PC**

Network-2:

1. **Add a PC**
    a. **Assign IP address of 200.200.200.200**
2. **Add a Switch (2960)**
3. **Connect the PC to the Switch**
4. **Capture screenshot of the "IP configuration" of PC**

Add a Router (2911):

1. **Connect both of the Switches to Router keeping in mind the respective Port (FastEthernet or GigabitEthernet)**
2. **Assign IPs to both of the Router Interfaces i.e. one for Network-1 and other for Network-2**
3. **Capture screenshots of Both of the Router Interfaces**

PING:

1. **Send PING request from Network-2 i.e. PC = 200.200.200.200 to the Network-1 i.e. PC = IP with your Student_ID last 2 digits**
2. **Capture the screenshot of "PING Request"**

CLO 3
(20 marks)

Question 03: Implement Static Routing in the Network

Network-1:

1. **Add first PC**
    a. **Assign IP address (last 2 digits of student ID for each octet)**
    b. **Example: ID = 201764, IP = 64.64.64.64**
    c. **If last 2 digits of your ID are 00, then assign 100.100.100.100**
2. **Add second PC**
    a. **Assign the NEXT IP address**
    b. **Example: ID = 201764, IP-1 = 64.64.64.64, IP-2 = 64.64.64.65**
    c. **In case of 100.100.100.100, assign 101.101.101.101**
3. **Add a Switch (2960)**
4. **Connect both of the PCs to the Switch**
5. **Capture screenshot of the "IP configuration" of both of the PCs**
6. **Add a Router (2911): (Router-1)**
    a. **Connect the switch to Router keeping in mind the respective Port (FastEthernet or GigabitEthernet)**
    b. **Assign IPs to both of the Router Interfaces i.e. one for Network-1 and other for Router-2**
    c. **Capture screenshots of Both of the Router Interfaces**

Network-2:

1. **Add first PC**
    a. **Assign IP address 192.192.192.192**
2. **Add second PC**
    a. **Assign IP address 192.192.192.193**
3. **Add a Switch (2960)**
4. **Connect both of the PCs to the Switch**
5. **Capture screenshot of the "IP configuration" of both of the PCs**
6. **Add a Router (2911): (Router-2)**
    a. **Connect the switch to Router keeping in mind the respective Port (FastEthernet or GigabitEthernet)**
    b. **Assign IPs to both of the Router Interfaces i.e. one for Network-2 and other for Router-1**
    c. **Capture screenshots of Both of the Router Interfaces**

Static Routing:

1. **Implement Static Routing and configure both Routers**
2. **Establish communication between both networks i.e. Network-1 and Network-2**

PING:

1. **Generate a ping request from Network 2 to Network 1**
2. **Example: Ping from 192.192.192.192 to 64.64.64.64 (Or Your IP)**
3. **Take Screenshot of the PING request**

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