

## FIRST SIT COURSEWORK

Year Long 2019/20

<b>Module Code:</b>	<b>CT4005NA</b>
<b>Module Title:</b>	<b>Computer Hardware and Software Architectures</b>
<b>Module Leader:</b>	<b>Badri Lamichhane (Informatics College Pokhara)</b>

<b>Date:</b>	10 <sup>th</sup> June
<b>Day / Evening:</b>	Wednesday
<b>Start Time:</b>	
<b>Duration:</b>	

<b>Test Type:</b>	<b>Coursework</b>
<b>Materials supplied:</b>	None
<b>Materials permitted:</b>	Writing equipment only
<b>Warning:</b>	Candidates are warned that possession of unauthorized materials in a test is a serious assessment offence.

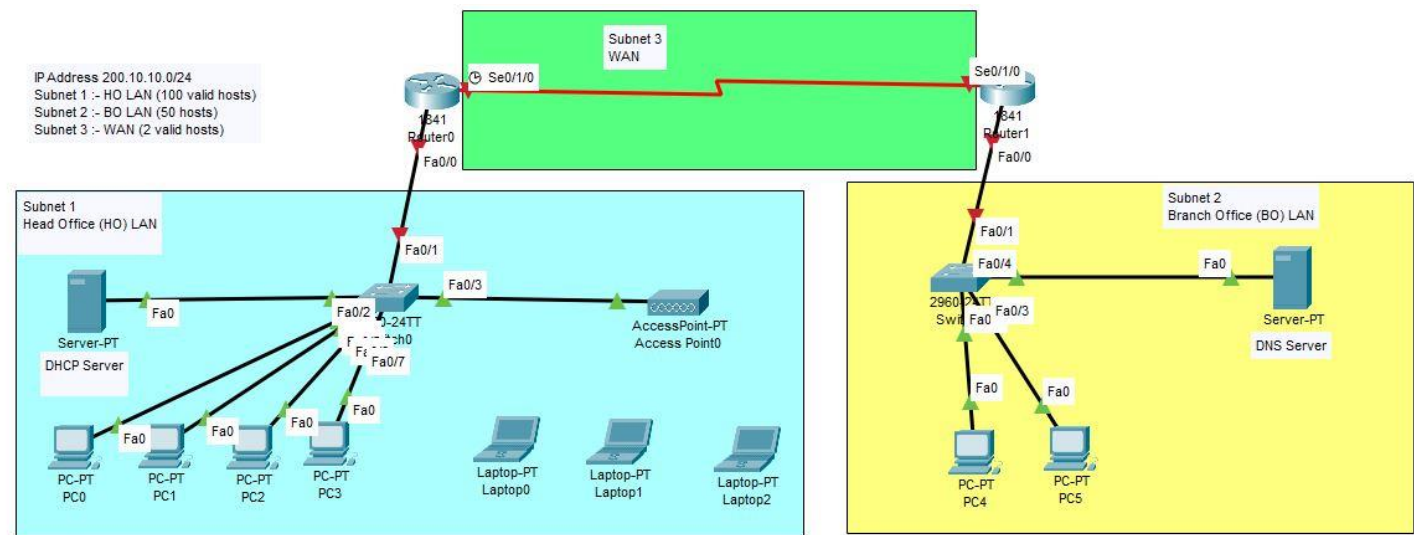
<b>Instructions to candidates:</b>	<p>This test accounts for <b>60%</b> of your total module grades.</p> <p>You are to <b>submit this test paper</b>, in the google classroom.</p>
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Last Name : Adhikari

First Name : Krishna

Id. No : 19030988

Topology: -



Task 1 (Subnetting)

[18]

1. Subnet the IP **200.10.10.0/24** for: -
- a) Head Office (HO) LAN (100 valid hosts)
  - b) Branch Office (BO) LAN (50 valid hosts)
  - c) WAN (2 valid hosts)

[ 9 x 2 = 18]

Fill in the Following Information (Write the address with the subnet mask included in CIDR Notation)

a. Subnet 1 HO LAN:

Network Address	Usable IP Address Range	Broadcast Address
200.10.10.0/25	200.10.10.1/25 to 200.10.10.126/25	200.10.10.127/25

b. Subnet 2 BO LAN:

Network Address	Usable IP Address Range	Broadcast Address
200.10.10.128/26	200.10.10.129/26 to 200.10.10.190/26	200.10.10.191/26

c. Subnet 3 WAN:

Network Address	Usable IP Address Range	Broadcast Address
200.10.10.192/30	200.10.10.193/30 to 200.10.10.194/30	200.10.10.195/30

**Task 2 (Configure Static IP)****[32]**

2. HO Router0 LAN interface (fa0/0) → First usable IP address of Subnet 1 HO LAN

Fill in the following information for Router fa0/0 interface:

**[ 2 X 2 = 4]**

IP Address	200.10.10.1
Subnet Mask	255.255.255.128

3. HO Router0 WAN interface S0/1/0 → First usable IP of WAN subnet3

Fill in the following information for HO Router WAN interface S0/1/0

**[ 2 X 2 = 4]**

IP Address	200.10.10.193
Subnet Mask	255.255.255.252

4. BO Router1 LAN interface (fa0/0) → First usable IP address of Subnet 2 BO LAN

Fill in the following information for Router fa0/0 interface:

**[ 2 X 2 = 4]**

IP Address	200.10.10.129
Subnet Mask	255.255.255.192

5. BO Router1 WAN interface S0/1/0 → Second usable IP of WAN subnet3

Fill in the following information for BO Router1 WAN interface S0/1/0

**[ 2 X 2 = 4]**

IP Address	200.10.10.194
Subnet Mask	255.255.255.252

6. DNS Server → Second usable IP address of Subnet 2 BO LAN

Fill in the following information for DNS Network Interface Card interface:

**[ 4 X 2 = 8 ]**

IP Address	200.10.10.130
Subnet Mask	255.255.255.192
Default Gateway	200.10.10.129
DNS Server	200.10.10.130

7. DHCP Server → Second usable IP address of Subnet1 HO LAN

Fill in the following information for DHCP Network Interface Card interface:

**[ 4 x 2 = 8]**

IP Address	200.10.10.2
Subnet Mask	255.255.255.128
Default Gateway	200.10.10.1
DNS Server	200.10.10.130

**Task 3: Configure DNS and DHCP Service.****[14]**

8. Configure DNS service in DNS Server as instructed in the packet tracer activity file.

Fill in the following information for DNS Server

**[ 2 X 2 = 4]**

Domain Name	www.islington.edu.np
IP Address	200.10.10.130

9. Configure DHCP Service in DHCP Server as instructed in the packet tracer activity file.

Fill in the following information for DHCP Service

**[ 5 X 2 = 10]**

Pool name	serverpool
Default Gateway	200.10.10.1
DNS Server	200.10.10.130
Start IP Address	200.10.10.3
Subnet Mask	200.10.10.128

**Task 4: Configure Wireless Access point****[6]**

10. Configure Wireless Access Point as instructed in the packet tracer activity file.

Fill in the following information for Wireless Access point:

**[ 3 X 2 = 6]**

Wi-Fi SSID Name	Islington College
Encryption type	WPA2-PSK
Wi-Fi Password	Abcd1234

**Task 5: Configure Static Routing****[18]**

11. Configure Static Routing in both HO Router0 and BO Router1

a. Fill in the following information for Static routing in Router0:

**[ 3 X 3 = 9 ]**

Destination Network Address	200.10.10.128
Destination Network Address Subnet Mask	255.255.255.192
Next hop IP address	200.10.10.194

b. Fill in the following information for Static routing in Router1:

**[ 3 X 3 = 9 ]**

Destination Network Address	200.10.10.0
Destination Network Address Subnet Mask	255.255.255.128
Next hop IP address	200.10.10.193

**Task 6: Verify Connectivity****[12]**

12. Verify connectivity

**[ 4 X 3 = 12 ]**

Do a ping test from PC0 to PC5 and answer the following question.

a. Does the ping test successfully?

The ping test was performed successfully.

b. What is the IP address PC5 that you found from the ping test?

200.10.10.132

Do a ping test from Laptop0 to [www.islington.edu.np](http://www.islington.edu.np) and answer the following question:

c. Does the ping test successfully?

The ping test was performed successfully.

d. What is the IP address of [www.islington.edu.np](http://www.islington.edu.np) that you found from the ping test?

200.10.10.130

**THE END**