LONDON METROPOLITAN UNIVERSITY

1st Sit Examination Question Paper **Year Long 2021**

Module code:	**CT4004NI**
Module title:	**Networking Concepts (CCNA 1 & 2)**
Module leader:	**Ravi Chandra Gurung (Islington College)**

Date:	
Day / evening:	**Day**
Start time:	
Duration:	**8 hours**

Exam type:	**Practical exam**
Materials supplied:	**None**
Materials permitted:	**Only Handwritten Logbook**
Warning:	**Candidates are warned that possession of unauthorized materials in an examination is a serious assessment offence.**

Instructions to candidates:	**Candidates should follow the instruction to complete the configuration.** **The candidates should answer the theoretical questions in a separate pdf file.** **DO NOT TURN PAGE OVER UNTIL INSTRUCTED**

Assessment Office,

Please note the following:

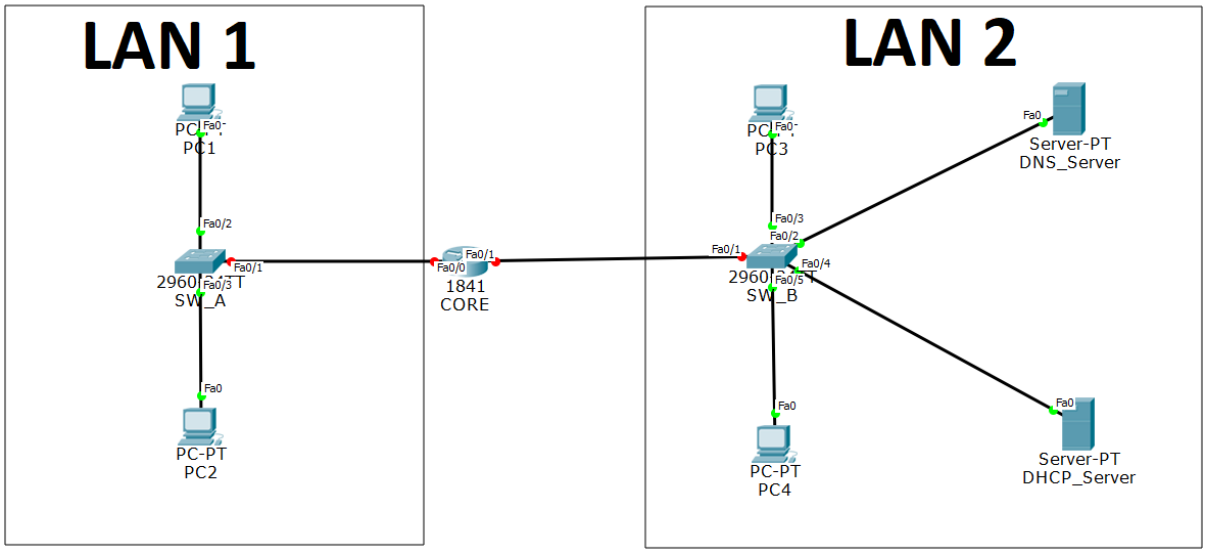
- *This is a Laboratory Based Examination and must be timetabled in labs.*
- *Re-assessment: The assessment is locally arranged to take place.*

  We request for this to be timetabled officially. Students who are required to take the re-assessment would know of it because they can see their first take results on the Cisco website.

- *There is no need for hard copy of the paper as the paper would be provided on-line.*
- *The hard copy given in the following pages are for the purpose of Quality inspection only.*
- *All the examination papers for Cisco based modules are property of Cisco Systems and should not be published or distributed to any students without prior consent of Cisco Academy or its representative at University.*

Part A: Exploration Network Fundamentals (Skills Based Final)

Topology Diagram



Assessment Objectives

1.	Design Topology	**42**
2.	Basic Router Configuration	**20**
3.	Configure DHCP Server	**23**
4.	Configure DNS Server	**12**
5.	Verification	**3**
	a. Network Connectivity	
	b. DNS Configuration	
	c. DHCP Configuration	

Scenario

Students are required to provide proper IPs to the devices, configure the router with the basic router configurations and verify all the connectivity.

1. Design Topology

Given an IP address and mask of 172.16.1.0/24 (address/mask), design an IP addressing scheme that satisfies the following requirements.

LAN	Number of Hosts
LAN 1	5
LAN 2	66

LAN 1

Task	Specification	Points	Total Marks = 21
Subnet Mask in Bits		**3**	
Subnet Mask in Decimal		**3**	
Number of Usable Host in the Network		**3**	
First IP Host Address		**3**	
Last IP Host Address		**3**	
Network Address		**3**	
Broadcast Address		**3**	

Assign the second last and last usable IP addresses in the PCs of the LAN 1.

LAN 2

Total Range for the Network	Specification	Points	Total Marks = 21
Subnet Mask in Bits		**3**	
Subnet Mask in Decimal		**3**	
Number of Usable Host in the Network		**3**	
First IP Host Address		**3**	
Last IP Host Address		**3**	
Network Address		**3**	
Broadcast Address		**3**	

Points: _____ of 42

2. Basic Router Configuration

Task	Specifications
Hostname	CORE
Encrypted Privileged exec Password	***ciscoen***
Console Access Password	***ciscoco***
Telnet Access Password	***ciscote***
Banner MOTD	Unauthorized access is strictly prohibited!
Interface Fa0/0	First Usable IP of the Network
Interface Fa0/1	First Usable IP of the Network
Disable Domain Lookup	Disable hostname lookup
Encrypt all user passwords	Prevent unauthorized viewing of passwords

Points: _____ of 20

3. Configure DHCP Server

Tasks	
DHCP services enabled	
DHCP server address	**Second usable host IP**
Default Gateway	
Start IP address	**Third usable Host IP**
Subnet mask	
Maximum number of users	**5**
Pool Name	**serverPool**

Use the Second usable host IP and the Third usable Host IP of LAN 2 as the static and start IP address on the DHCP server respectively.

Assign the automatically generated IP addresses from the DHCP server on the PCs on the LAN 2.

Points: _____ of 23

4. Configure DNS Server

Task	Specification
DNS Service	**Enable**
Set URL	www.cisco.edu.np
DNS Server Address	**Last Usable IP of LAN 2**
Add DNS Record	**Add**

Assign the Last Usable IP of LAN 2 as the static IP address for the DNS server.

Points: _____ of 12

5. Verify Connectivity

Verify that all the PCs of both Networks can ping and use the DNS and DHCP services.

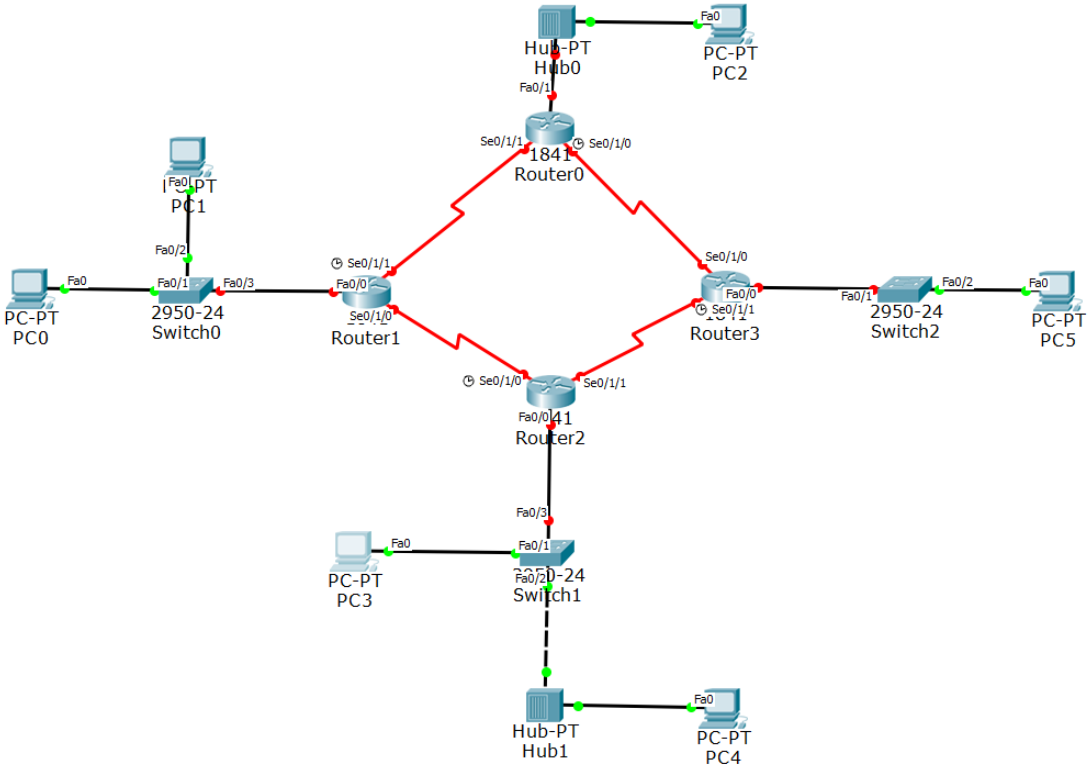
The _____ command on a Cisco device can be used to identify the path used by a packet to reach its target. It identifies all the routers in the path from the source host to destination host and it can be useful when troubleshooting network problems. 3 **Marks**

Part B: Theoretical Questions

Note: Please write the following answers in a separate word file, then convert it into PDF file. You will be required to submit PDF file for this.

Section A (3 * 2 = 6 marks)

1. Why would a technician enter the command **write** command in privilege mode?
2. What does the command '**line vty 0 15'** signify?
3. Find the number of Broadcast and Collision Domain in the following Topology.



Section B (5 * 4 = 20 marks)

4. Differentiate between physical and logical topology diagrams.
5. Which three services are provided by the AAA framework?
6. Which subnet mask would be used if 10 host bits are available? Describe your answer.
7. Describe the frame forwarding methods on Cisco Switches.
8. Define Ephemeral Ports and their range.

Section C (1 * 14 = 14 marks)

9. List the functions, devices used, protocols, and PDU of each of the layers of the OSI Model. (14 marks)

Best of Luck.