POLITEKNIK MALAYSIA
MUKAH

CLO2(3) CLO3(27)	
TOTAL(30)	

Marks

DEPARTMENT OF INFORMATION TECHNOLOGY & COMMUNICATION
COURSE WORK ASSESSMENT (Session: DECEMBER 2018)

Name : _____

Code & Course: DFN5013 BASIC ROUTING TECHNOLOGY

Lecturer : _____

Practical Task(s) No: 1 / 2 / 3 / 4 **[CLO2, P3, CLO3, P4]**

Registration No. : 20DNS

Programme : DNS

Week (Date) : W14 (25-29/3/19)

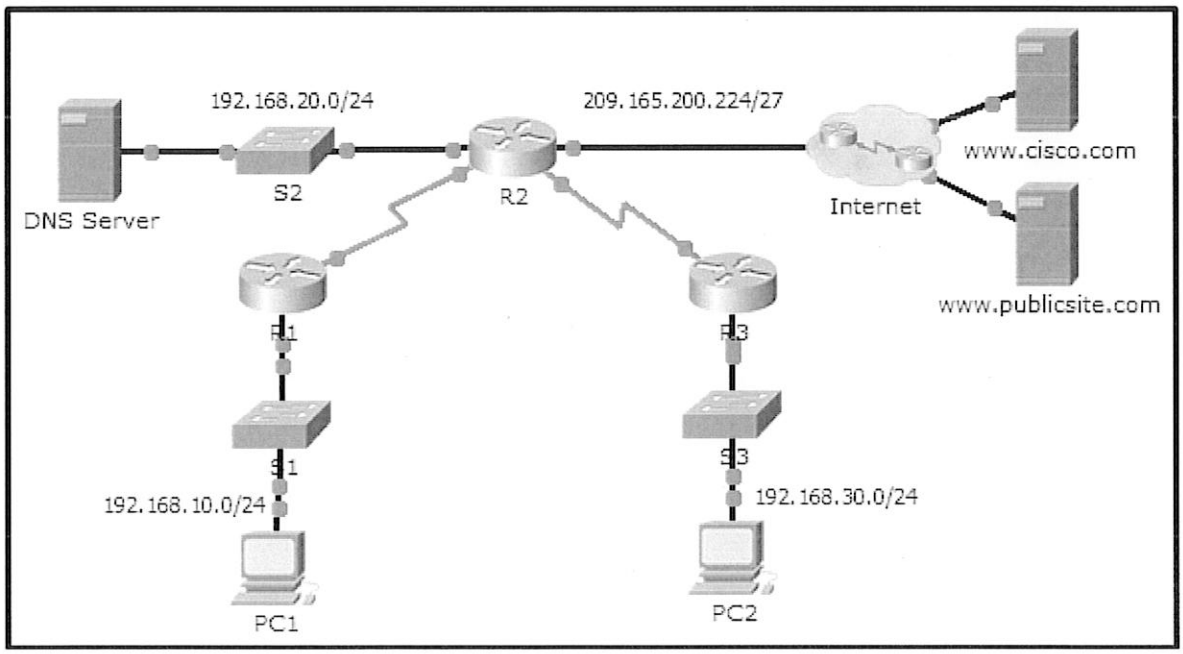
Duration : 4 HOURS

Instruction(s):

i. Follow the instructions given.

ii. Your marks will be based on the rubrics given.

Topolgy:



Addressing Table

Device	Interface	IPv4 Address	Subnet Mask	Default Gateway
R1	G0/0	192.168.10.1	255.255.255.0	N/A
	S0/0/0	10.1.1.1	255.255.255.252	N/A
R2	G0/0	192.168.20.1	255.255.255.0	N/A
	G0/1	DHCP Assigned	DHCP Assigned	N/A
	S0/0/0	10.1.1.2	255.255.255.252	N/A
	S0/0/1	10.2.2.2	255.255.255.252	N/A
R3	G0/0	192.168.30.1	255.255.255.0	N/A
	S0/0/1	10.2.2.1	255.255.255.0	N/A
PC1	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
PC2	NIC	DHCP Assigned	DHCP Assigned	DHCP Assigned
DNS Server	NIC	192.168.20.254	255.255.255.0	192.168.20.1

Objectives:

Part 1: Configure a Router as a DHCP Server
Part 2: Configure DHCP Relay
Part 3: Configure a Router as a DHCP Client
Part 4: Verify DHCP and Connectivity

Scenario:

A dedicated DHCP server is scalable and relatively easy to manage, but can be costly to have one at every location in a network. However, a Cisco router can be configured to provide DHCP services without the need for a dedicated server. As the network technician for your company, you are tasked with configuring a Cisco router as a DHCP server to provide dynamic allocation of addresses to clients on the network. You are also required to configure the edge router as a DHCP client so that it receives an IP address from the ISP network.

Part 1: Configure a Router as a DHCP Server

Step 1: Configure the excluded IPv4 addresses.

Configure R2 to exclude the first 10 addresses from the R1 and R3 LANs. All other addresses should be available in the DHCP address pool.

Write the command line configuration [CLO3]:

Step 2: Create a DHCP pool on R2 for the R1 LAN.

a. Create a DHCP pool named R1-LAN (case-sensitive).

Write the command line configuration [CLO3]:

b. Configure the DHCP pool to include the network address, the default gateway, and the IP address of the DNS server.

Write the command line configuration [CLO3]:

Step 3: Create a DHCP pool on R2 for the R3 LAN.

a. Create a DHCP pool named R1-LAN (case-sensitive).

Write the command line configuration [CLO3]:

b. Configure the DHCP pool to include the network address, the default gateway, and the IP address of the DNS server.

Write the command line configuration [CLO3]:

Part 2: Configure DHCP Relay

L3 should not be able to reach Server1 or Server2, but this is not currently the case.

Step 1: Configure R1 and R3 as a DHCP relay agent.

Write the command line configuration [CLO3]:

Step 2: Set PC1 and PC2 to receive IP addressing information from DHCP.

Part 3: Configure R2 as a DHCP Client

a. Configure the Gigabit Ethernet 0/1 interface on R2 to receive IP addressing from DHCP and activate the interface.

Write the command line configuration [CLO3]:

Note: Use Packet Tracer's **Fast Forward Time** feature to speed up the process or wait until R2 forms an EIGRP adjacency with the ISP router.

b. Use the **`show ip interface brief`** command to verify that R2 received an IP address from DHCP.

Part 4: Verify DHCP and Connectivity

Step 1: Verify DHCP binding.

```
R2# show ip dhcp binding
IP address       Client-ID/              Lease expiration        Type
                 Hardware address
192.168.10.11    0002.4AA5.1470           --                     Automatic
192.168.30.11    0004.9A97.2535           --                     Automatic
```

Step 2: Verify configurations.

Verify that PC1 and PC2 can now ping each other and all other devices.

Write the command line configuration [CLO2]:

Marking Rubric

ACTIVITY SECTION	QUESTION LOCATION	POSSIBLE POINTS	EARNED POINTS	CLO
Part 1 - Step 1: Configure the excluded IPv4 addresses.	Step 1	4		CLO 3
Part 1 - Step 2(a): Create a DHCP pool on R2 for the R1 LAN.	Step 2(a)	1		CLO 3
Part 1 - Step 2(b): Create a DHCP pool on R2 for the R1 LAN.	Step 2(b)	6		CLO 3
Part 1 – Step 3(a): Create a DHCP pool on R2 for the R3 LAN.	Step 3(a)	1		CLO 3
Part 1 – Step 3(b): Create a DHCP pool on R2 for the R3 LAN.	Step 3(b)	6		CLO 3
	Total	**18**		
Part 2 – Step 1: Configure R1 and R3 as a DHCP relay agent.	Step 1	6		CLO 3
	Total	**6**		
Part 3	a.	3		CLO 3
	Total	**3**		
Part 4 – Step 2: Verify configurations.	Step 2	3		CLO 2
	Total	**3**		
	TOTAL SCORE	**30**		

Originality of Work

PACKET TRACER	QUESTION LOCATION (Circle the category)	TOTAL SCORE (from Marking Rubric)	WEIGHT	FINAL MARK
Originality of students' work based on the pre-assigned file.	Original	CLO2: CLO3:	x1 x1	CLO2: CLO3:
	Non-Original	CLO2: CLO3:	x0.5 x0.5	CLO2: CLO3:

Prepared by:

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Course Coordinatior
Date: 14/1/19

Verified by:

(Fifdil B. Majiwan)

Date: 14/1/19

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