Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

LOCATION: LONDON **LLEOLIAD:**

LEVEL 6 **LEFEL 6**

EXAMINATION PERIOD **CYFNOD ARHOLIADAU**
FEBRUARY 2022 TERM

MODULE CODE: CSAC6002
COD Y MODWL: CSAC6002
WIDE AREA NETWORKS

TIME: 3 HOURS

Name : _____

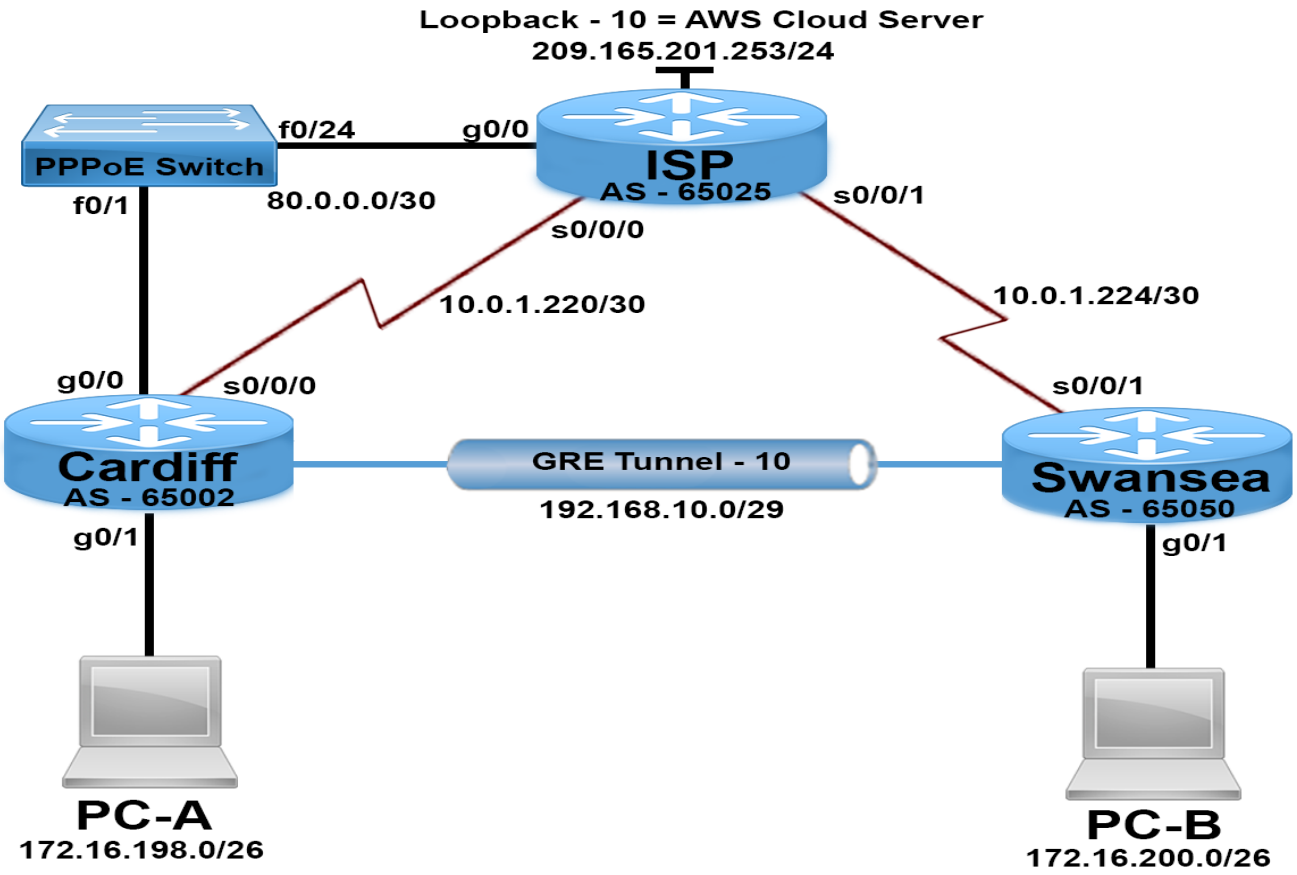
Student ID : _____

Date & Time : _____

This is an individual practical online lab-test, held under examination conditions (Live Configuration and Demonstration using Microsoft Teams).You will have to use CISCO Packet tracer to configure these devices based on the given specifications.

This paper is marked out of 50.

Device IPv4 Address Tables;



ISP

Interface	IP Address	CIDR
Loopback 10	209.165.201.253	/24
G0/0	PPPoE Enabled Global Group	-
G0/1	Last Available Address (Refer to Topology)	/26
Virtual Template 1	80.0.0.1	/30
S0/0/0	First Available Address (Refer to Topology)	/30
s0/0/1	First Available Address (Refer to Topology)	/30

Cardiff

Interface	IP Address	CIDR
G0/0	PPPoE Enabled – Dialer Pool 1	-

Dialer 1	IP Address Negotiated – Last Available PPPoE Pool	-
Tunnel 10	First Available Address (Refer to Topology)	/29
S0/0/0	Last Available Address (Refer to Topology)	/30

Swansea

Interface	IP Address	CIDR
G0/1	Last Available Address (Refer to Topology)	/26
Tunnel 10	Fifth Available Address (Refer to Topology)	/29
S0/0/1	Last Available Address (Refer to Topology)	/30

PC-A

Interface	IP Address	Default Gateway	DNS Server
NIC	DHCP	DHCP	8.8.8.8

PC-B

Interface	IP Address	Default Gateway	DNS Server
NIC	DHCP	DHCP	8.8.8.8

Task 1: - Topology Creation (10 marks)

Using Packet Tracer software create the topology shown above and complete all tasks below.

Task 2: - Basic Device Configuration (10 marks)

1. Cable a network as per the topology diagram.
2. Configure all devices with IP address shown in the above tables and network topology.
3. Configure hostnames on each device.
4. Disable DNS lookup on all routers.

Task 3: - Configure Exterior Gateway Routing with BGP (10 Marks)

1. Create a BGP instance on all routers utilizing the Autonomous System Numbers (ASN) that has been given within the network topology.
2. Configure all routers with the network statements pertaining to each of their interface subnet addresses.
3. Verify all routes are on routing table.

Task: 4 - Point to Point Protocol (PPP) (6 Marks)

1. Configure all serial links to utilize PPP encapsulation

Task: 5 - Generic Routing Encapsulation (GRE) Tunnel (9 Marks)

1. Configure a GRE tunnel link between Cardiff and Swansea routers using the IP address given within the IP table for the tunnel addresses. Use tunnel 10 as the GRE interface.

2. Use the serial interfaces as the source for each tunnel respectively.

3. Use the serial link IP address for the destination of the tunnel on Cardiff and Swansea routers.

Task: 6 - Network Address Translation (NAT) (5 Marks)

1. Allow PC-A and PC-B subnet to utilize PAT.
2. Configure NAT on the correct interfaces on the ISP router to start the NAT process.

Submission Requirement

The packet tracer file should be saved as "***studentname_id"*** and uploaded on Moodle. In addition to packet tracer file, you **must** also submit

- the output of show running-configuration command in a text file for all devices configured.

All documentation for your solution should be submitted electronically on Moodle.
It is your responsibility that you submit all the outputs and files correctly.