



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

LOCATION: COLEG SIR GAR

LLEOLIAD: COLEG SIR GAR

LEVEL 6

LEFEL 6

EXAMINATION PERIOD
JANUARY 2018

CYFNOD ARHOLIADAU
IONAWR 2018

WEDNESDAY, 17TH OF JANUARY 2018
11.30AM

DYDD MERCHER, 17^{EG} O IONAWR 2018
11.30YB

MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

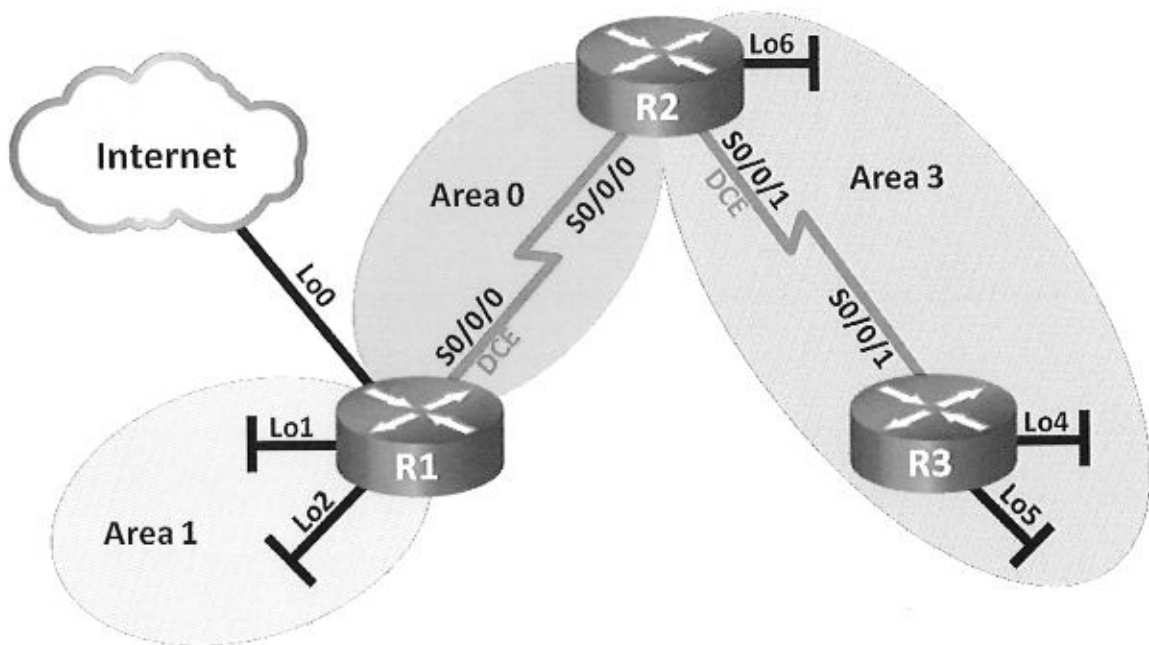
Name : LEWIS WELLS
Student ID : 090272
Date & Time : 17-01-18 11:30 - 13:30

This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

91
91/

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	Lo0	209.165.200.225	255.255.255.252
	Lo1	192.168.1.1	255.255.255.0
	Lo2	192.168.2.1	255.255.255.0
	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off: _____

66/

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. *R1, R2, R3*
- b. Configure device name, as shown in the topology. *R1, R2, R3*
- c. Assign **class** as the privileged EXEC password. *R1, R2, R3*
- d. Assign **cisco** as the console and vty passwords. *R1, R2, R3*
- e. Configure **logging synchronous** for the console line. *R1, R2, R3*
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. *R1, R2, R3*
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. *R1, R2, R3*
- h. Copy the running configuration to the startup configuration.

20
20/

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s): R1 R2
Identify the Autonomous System Boundary Router(s) R1
(ASBR): Identify the Area Border Router(s) (ABR): R1 R2
Identify the Internal router(s): R3

8 8✓

Step 2: Configure OSPF on R1.

(15 Marks)

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✓
- Configure OSPF to propagate the routes throughout the OSPF areas. ✓

15 15✓

Step 3: Configure OSPF on R2.

(10 Marks)

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10✓

Step 4: Configure OSPF on R3.

(10 Marks)

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10✓

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

Not MD5
Not Applied To OSPF Process

6 6✓

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

(10 Marks)

- Calculate the summary route for the networks in area 1. ✓
- Configure the summary route for area 1 on R1. ✓
- Calculate the summary route for the networks in area 3. ✓
- Configure the summary route for area 3 on R2. ✓

10

10 ✓

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

(6 Marks)

Routers	Result
R1 to R2	✓
R1 to R3	✓
R2 to R1	✓
R2 to R3	✓
R3 to R1	✓
R3 to R2	✓

6 ✓

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename surname Pno.txt.

```
show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf
```

All documentation for your solution should be submitted via USB.
It is your responsibility that you copy all the outputs and files correctly.

Diwedd/End



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MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

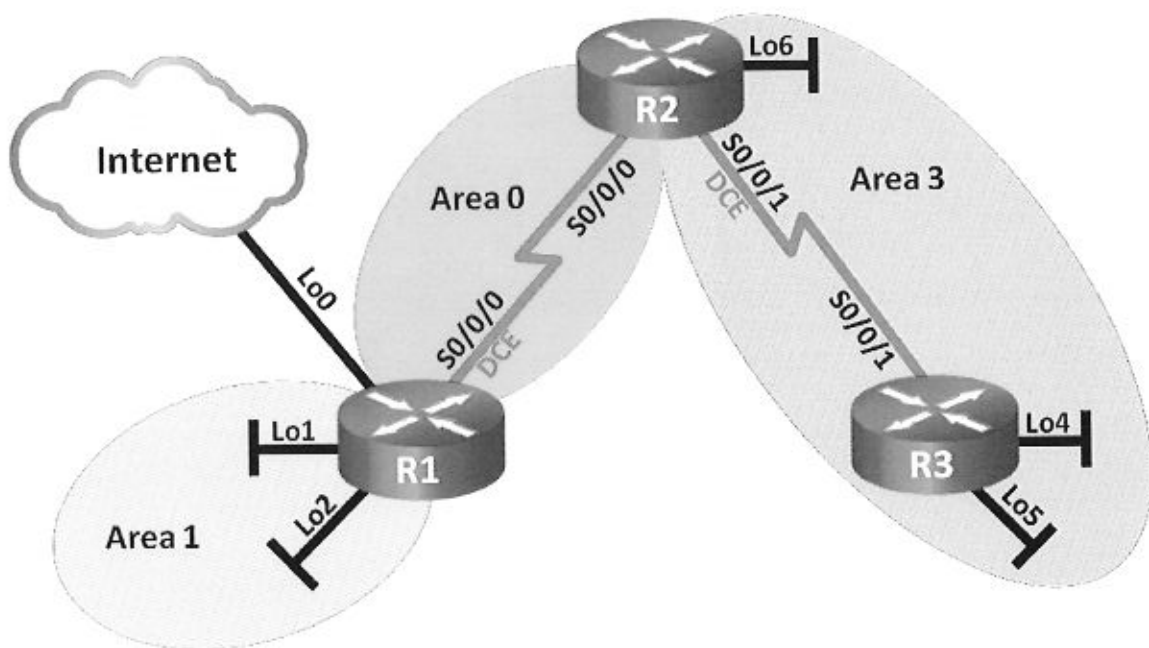
Name : DANIEL BOWDEN
Student ID : 162427
Date & Time : 17/01/2018

This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

91
91/

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
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	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off:



6
6/

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. *R1, R2, R3*
- b. Configure device name, as shown in the topology. *R1, R2, R3*
- c. Assign **class** as the privileged EXEC password. *R1, R2, R3*
- d. Assign **cisco** as the console and vty passwords. *R1, R2, R3*
- e. Configure **logging synchronous** for the console line. *R1, R2, R3*
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. *R1, R2, R3*
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. *R1, R2, R3*
- h. Copy the running configuration to the startup configuration.

20

20
✓

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s): R1, R2

Identify the Autonomous System Boundary Router(s) (ASBR): R1

(ASBR): Identify the Area Border Router(s) (ABR): R1, R2

Identify the Internal router(s): R3

8 8 ✓

Step 2: Configure OSPF on R1.

(15 Marks)

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✓
- Configure OSPF to propagate the routes throughout the OSPF areas. ✓

15 15 ✓

Step 3: Configure OSPF on R2.

(10 Marks)

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10 ✓

Step 4: Configure OSPF on R3.

(10 Marks)

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10 ✓

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

6 6 ✓

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

- Calculate the summary route for the networks in area 1.
- Configure the summary route for area 1 on R1.
- Calculate the summary route for the networks in area 3.
- Configure the summary route for area 3 on R2.

(10 Marks)

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

Routers	Result
R1 to R2	✓
R1 to R3	✓
R2 to R1	✓
R2 to R3	✓
R3 to R1	✓
R3 to R2	✓

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename_surname_Pno.txt.

```
show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf
```

All documentation for your solution should be submitted via USB.
It is your responsibility that you copy all the outputs and files correctly.

Diwedd/End

192.168.1.0

192.168.2.0

* * *

128 64 32

0 0 0

0 0 0

192.168.0.0/22

255.255.252.0

192.168.4.0

5.0

6.0

23.0

128 64 32

0 0 0

0 0 0

0 0 0

192.168.0.0

119

255.255.224.0

(6 Marks)

6

6/



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11.30AM

DYDD MERCHER, 17^{EG} O IONAWR 2018
11.30YB

MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

Name : Kyle Jenkins
Student ID : 179263
Date & Time : 17/01/2018 11:30

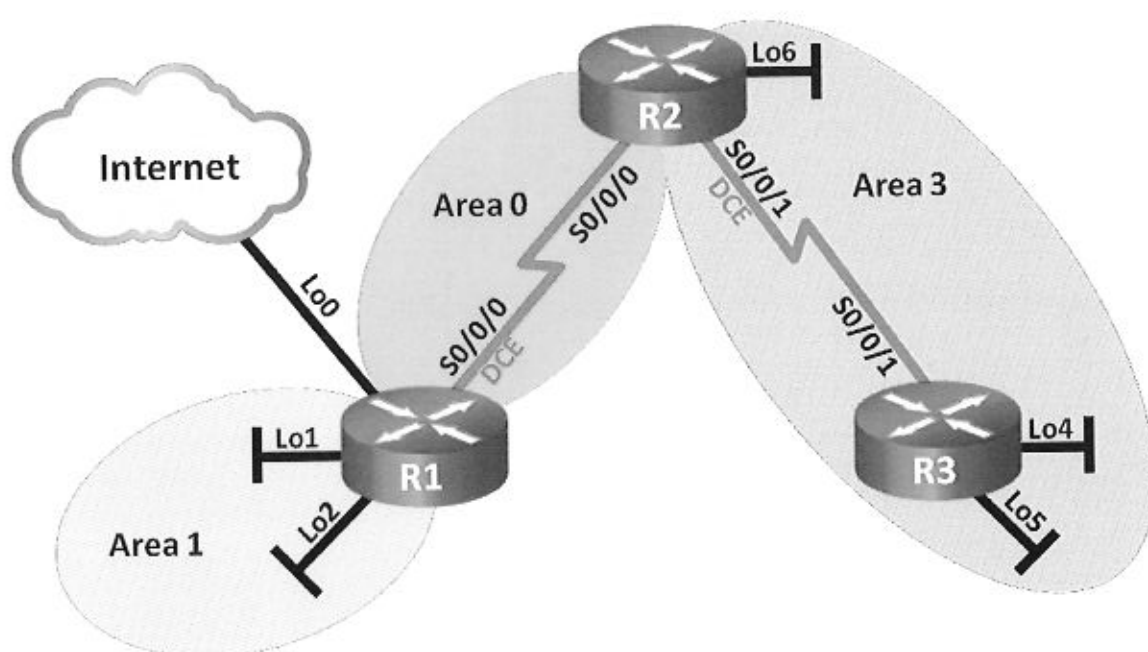
This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

84

84 ✓

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	Lo0	209.165.200.225	255.255.255.252
	Lo1	192.168.1.1	255.255.255.0
	Lo2	192.168.2.1	255.255.255.0
	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off: _____

6

✓

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. *R1, R2, R3*
- b. Configure device name, as shown in the topology. *R1, R2, R3*
- c. Assign **class** as the privileged EXEC password. *R1, R2, R3*
- d. Assign **cisco** as the console and vty passwords. *R1, R2, R3*
- e. Configure **logging synchronous** for the console line. *R1, R2, R3*
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. *R1, R2, R3*
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. *R1, R2, R3*
- h. Copy the running configuration to the startup configuration.

20

W
✓

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s): R2
Identify the Autonomous System Boundary Router(s) R1
(ASBR): Identify the Area Border Router(s) (ABR): R1, R2
Identify the Internal router(s): R3

6 6 ✓

Step 2: Configure OSPF on R1.

(15 Marks)

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✓
- Configure OSPF to propagate the routes throughout the OSPF areas. ✓

15 ✓

Step 3: Configure OSPF on R2.

(10 Marks)

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10 ✓

Step 4: Configure OSPF on R3.

(10 Marks)

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10 ✓

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

R2, R2, R3

Not in OSPF
Wrong Type

6 6 ✓

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

(10 Marks)

- a. Calculate the summary route for the networks in area 1. $192.168.0.0$ $255.255.252.0$
- b. Configure the summary route for area 1 on R1. ✓
- c. Calculate the summary route for the networks in area 3. $192.168.0.0$ $255.255.254.0$
- d. Configure the summary route for area 3 on R2. ✓ X
- 5
- 5/

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

(6 Marks)

Routers	Result
R1 to R2	Success
R1 to R3	Success
R2 to R1	Success
R2 to R3	Success
R3 to R1	Success
R3 to R2	Success

6

6/

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename surname Pro.txt.

show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf

All documentation for your solution should be submitted via USB.
It is your responsibility that you copy all the outputs and files correctly.

Diwedd/End

Area 1 Sunny route

192. 168. 2. 0

192. 168. 2. 0

128	64	32	16	8	4	2	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	0

192. 168. 0. 0

255. 255. 252. 0

Area 3 Sunny route

192. 168. 4. 0

192. 168. 8. 0

192. 168. 6. 0

192. 168. 23. 0

192. 168. 23. 0

128	64	32	16	8	4	2	1
0	0	0	0	0	1	0	0
0	0	0	0	0	1	0	1
0	0	0	0	0	1	1	0
0	0	0	1	0	1	1	1
0	0	0	1	0	1	1	1

192. 168. 0. 0

255. 255. 224. 0



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WEDNESDAY, 17TH OF JANUARY 2018
11.30AM

DYDD MERCHER, 17^{EG} O IONAWR 2018
11.30YB

MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

Name : RICHARDS STEPHENS
Student ID : 023872
Date & Time : 17-1-18

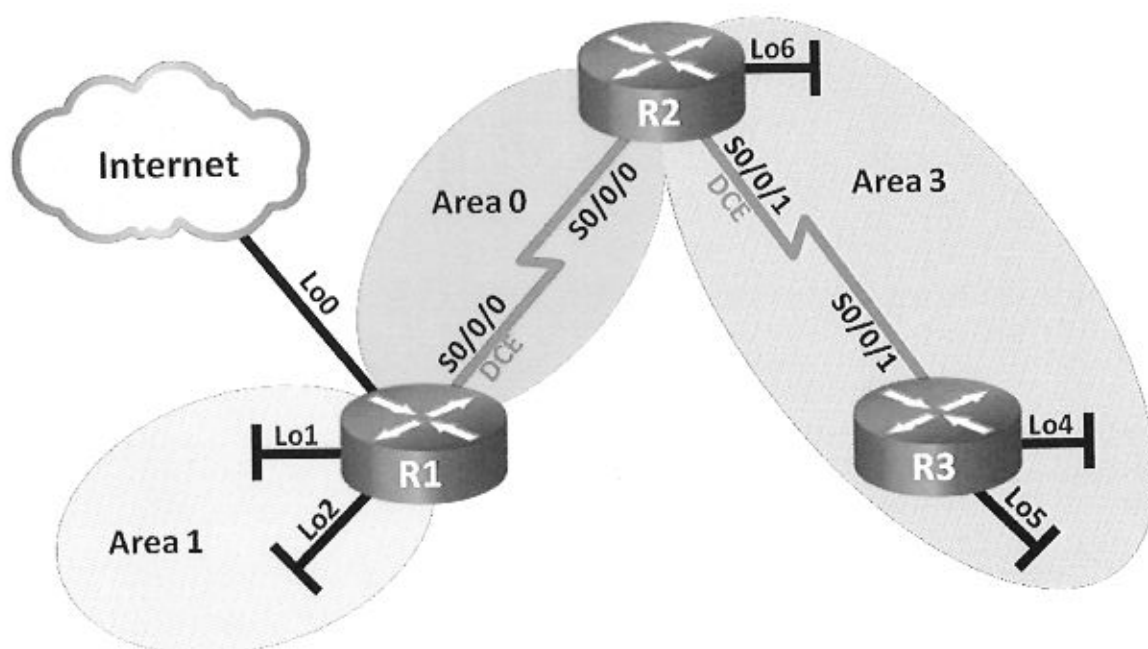
This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

81

81/

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	Lo0	209.165.200.225	255.255.255.252
	Lo1	192.168.1.1	255.255.255.0
	Lo2	192.168.2.1	255.255.255.0
	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off: _____

60/

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. *R1, R2, R3*
- b. Configure device name, as shown in the topology. *R1, R2, R3*
- c. Assign **class** as the privileged EXEC password. *R1, R2, R3*
- d. Assign **cisco** as the console and vty passwords. *R1 PARTIAL, R2 PARTIAL, R3 PARTIAL*
- e. Configure **logging synchronous** for the console line. *R1, R2, R3*
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. *R1, R2, R3*
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. *R1, R2, R3*
- h. Copy the running configuration to the startup configuration.

17

17/

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s): R1 + R2 ✓
Identify the Autonomous System Boundary Router(s) R1 ✓
(ASBR): Identify the Area Border Router(s) (ABR): R1 + R2 ✓
Identify the Internal router(s): R3 ✓

(15 Marks)

Step 2: Configure OSPF on R1.

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✓
- Configure OSPF to propagate the routes throughout the OSPF areas. ✓

(10 Marks)

Step 3: Configure OSPF on R2.

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

(10 Marks)

Step 4: Configure OSPF on R3.

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

NOT ADDED TO OSPF PROCESS

9 9/ ✓

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

(10 Marks)

- Calculate the summary route for the networks in area 1.
- Configure the summary route for area 1 on R1.
- Calculate the summary route for the networks in area 3.
- Configure the summary route for area 3 on R2.

192.168.0.0/24

192.168.0.0/24

192.168.0.0/24

192.168.0.0/24

192.168.0.0/24

192.168.0.0/24

0

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

(6 Marks)

Routers	Result
R1 to R2	/
R1 to R3	/
R2 to R1	/
R2 to R3	/
R3 to R1	/
R3 to R2	/

6

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename_surname_Pro.txt.

show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf

All documentation for your solution should be submitted via USB.
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Diwedd/End

6/



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MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

Name : OLIVER BRYAN JONES.
Student ID : 1505244
Date & Time : 17/01/2018 11:30-1:30

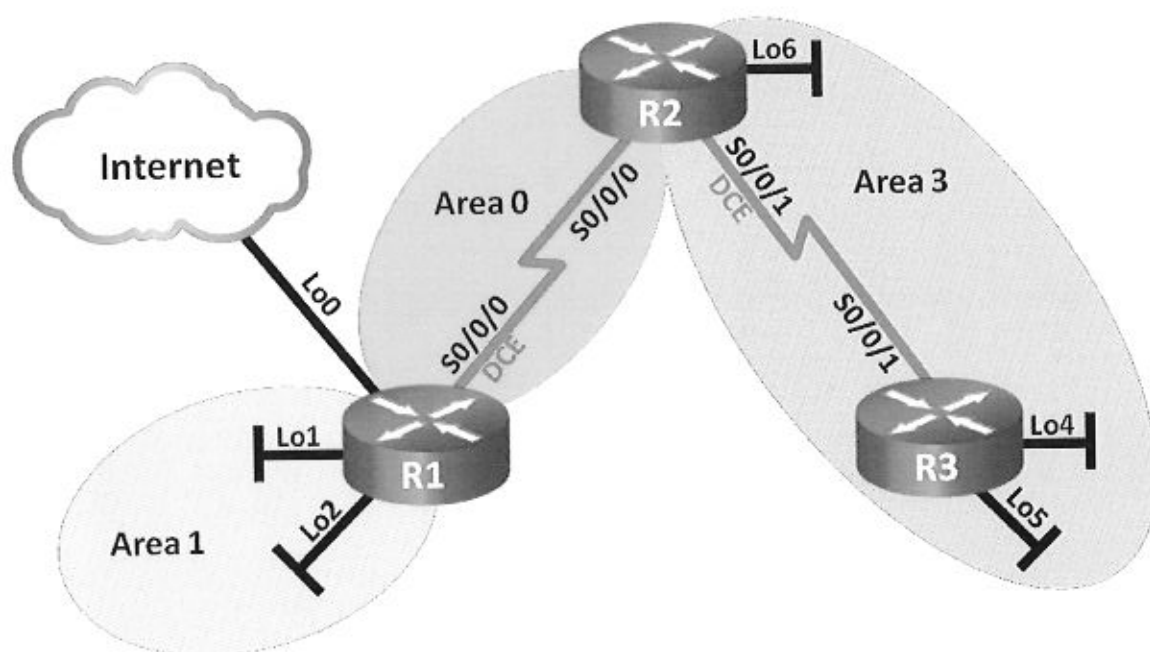
This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

50

90/

Topology



Addressing Table

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	Lo2	192.168.2.1	255.255.255.0
	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off: _____

6 ✓

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. ✓ R1, R2, R3
- b. Configure device name, as shown in the topology. ✓ R1, R2, R3
- c. Assign **class** as the privileged EXEC password. ✓ R1, R2, R3
- d. Assign **cisco** as the console and vty passwords. ✓ R1, R2, R3
- e. Configure **logging synchronous** for the console line. ✓ R1, R2, R3
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. ✓ R1, R2, R3
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. ✓ R1, R2, R3
- h. Copy the running configuration to the startup configuration.

NO SHUT DOWN
MISSING ON ALL

R2 - CLOCK RATE ON DTE
R3 - INCORRECT CLOCK RATE

15 ✓

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s):... R1 + R2.....

Identify the Autonomous System Boundary Router(s) ... R1.....

(ASBR): Identify the Area Border Router(s) (ABR):... R1 + R2...

Identify the Internal router(s):... R3.....

8 8 ✓

Step 2: Configure OSPF on R1.

(15 Marks)

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✗
- Configure OSPF to propagate the routes throughout the OSPF areas. ✗

9 9 ✓

Step 3: Configure OSPF on R2.

(10 Marks)

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. 1/3
- Set all LAN loopback interfaces as passive. ✓

5 5 ✓

Step 4: Configure OSPF on R3.

(10 Marks)

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. 2/3
- Set all LAN loopback interfaces as passive. ✓

7 7 ✓

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

✗ ✗

50

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

(10 Marks)

- a. Calculate the summary route for the networks in area 1. ✗
- b. Configure the summary route for area 1 on R1. ✗
- c. Calculate the summary route for the networks in area 3. ✗
- d. Configure the summary route for area 3 on R2. ✗

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

✗ (6 Marks)

Routers	Result
R1 to R2	
R1 to R3	
R2 to R1	
R2 to R3	
R3 to R1	
R3 to R2	

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename surname Pro.txt.

```
show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf
```

All documentation for your solution should be submitted via USB.
It is your responsibility that you copy all the outputs and files correctly.

Diwedd/End



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

LOCATION: COLEG SIR GAR

LLEOLIAD: COLEG SIR GAR

LEVEL 6

LEFEL 6

EXAMINATION PERIOD
JANUARY 2018

CYFNOD ARHOLIADAU
IONAWR 2018

WEDNESDAY, 17TH OF JANUARY 2018
11.30AM

DYDD MERCHER, 17^{EG} O IONAWR 2018
11.30YB

MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

Name : RICHARD DAVIES
Student ID : 069478
Date & Time : 17/01/2018

This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

70

70 ✓

Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	Lo0	209.165.200.225	255.255.255.252
	Lo1	192.168.1.1	255.255.255.0
	Lo2	192.168.2.1	255.255.255.0
	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

0 Area
 0 Area
 1 Area
 3 Area
 0 Area
 3 Area

2 16 24
 192.168.1.0
 192.168.2.0

255
 3
 128 64 32 16 8 4 2 1
 0 0 0 0 0 0 0 1
 0 0 0 0 0 0 0 1

192.168.0.0 / 22
 255.255.252.0

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off:

 6 6/

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. *R1, R2, R3*
- b. Configure device name, as shown in the topology. *R1, R2 X*
- c. Assign **class** as the privileged EXEC password. *R1, R2 R3*
- d. Assign **cisco** as the console and vty passwords. *R1, R2*
- e. Configure **logging synchronous** for the console line. *R1, R2, R3*
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. *R1, R2, R3*
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. *R1, R2, R3*
- h. Copy the running configuration to the startup configuration.

19

19/

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s):..... R1, R2

Identify the Autonomous System Boundary Router(s) R1

(ASBR): Identify the Area Border Router(s) (ABR):..... R1, R2

Identify the Internal router(s):..... R3

8 8/

Step 2: Configure OSPF on R1.

(15 Marks)

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✓
- Configure OSPF to propagate the routes throughout the OSPF areas. ✓

15 15/

Step 3: Configure OSPF on R2.

(10 Marks)

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10/

Step 4: Configure OSPF on R3.

(10 Marks)

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10 10/

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

0 0

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

(10 Marks)

- Calculate the summary route for the networks in area 1.
- Configure the summary route for area 1 on R1.
- Calculate the summary route for the networks in area 3.
- Configure the summary route for area 3 on R2.

✓
192.168.0.0/22 ✓
255.255.252.0 ✓

192.168.0.0/19 ✓
255.255.224.0 ✓

6
6/

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

(6 Marks)

Routers	Result
R1 to R2	✓
R1 to R3	✓
R2 to R1	✓
R2 to R3	✓
R3 to R1	✓
R3 to R2	✓

6
6/

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename surname Pno.txt.

show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf

All documentation for your solution should be submitted via USB.
It is your responsibility that you copy all the outputs and files correctly.

Diwedd/End



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

LOCATION: COLEG SIR GAR

LLEOLIAD: COLEG SIR GAR

LEVEL 6

LEFEL 6

EXAMINATION PERIOD
JANUARY 2018

CYFNOD ARHOLIADAU
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WEDNESDAY, 17TH OF JANUARY 2018
11.30AM

DYDD MERCHER, 17^{EG} O IONAWR 2018
11.30YB

MODULE CODE: CSAC6001
ADVANCED ROUTING

TIME: 2 HOURS

Name : Michael Bonnell
Student ID : 171381
Date & Time : 17/01/2018 11:30

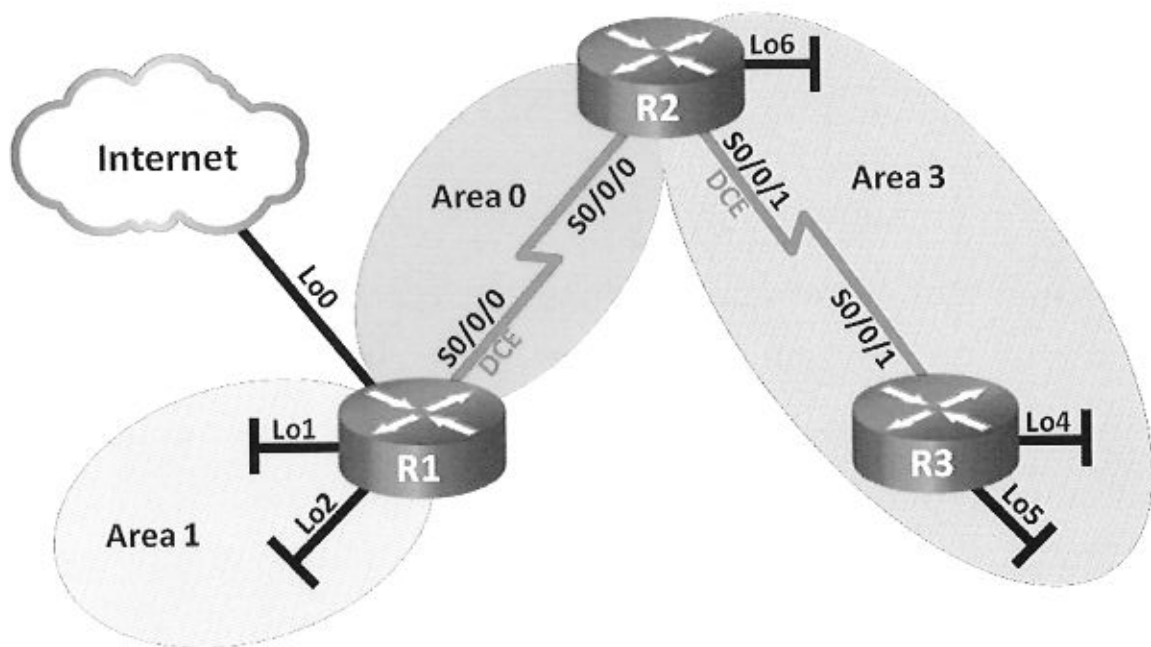
This is an individual practical lab-test, held under examination conditions. You will be assigned three Routers; you should configure these devices based on the given specifications.

This paper is marked out of 100.

89

89 ✓

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask
R1	Lo0	209.165.200.225	255.255.255.252
	Lo1	192.168.1.1	255.255.255.0
	Lo2	192.168.2.1	255.255.255.0
	S0/0/0 (DCE)	192.168.12.1	255.255.255.252
R2	Lo6	192.168.6.1	255.255.255.0
	S0/0/0	192.168.12.2	255.255.255.252
	S0/0/1 (DCE)	192.168.23.1	255.255.255.252
R3	Lo4	192.168.4.1	255.255.255.0
	Lo5	192.168.5.1	255.255.255.0
	S0/0/1	192.168.23.2	255.255.255.252

Task 1: Cable the network as shown in the topology.

(6 Marks)

Before proceeding, have your cabling verified by the examiner.

Instructor Sign-off:

 6 6/

Task 2: Configure basic settings for each router.

(20 Marks)

- a. Disable DNS lookup. *R1, R2, R3*
- b. Configure device name, as shown in the topology. *R1, R2, R3*
- c. Assign **class** as the privileged EXEC password. *R1, R2, R3*
- d. Assign **cisco** as the console and vty passwords. *R1, R2, R3*
- e. Configure **logging synchronous** for the console line. *R1, R2, R3*
- f. Configure an MOTD banner to warn users that unauthorized access is prohibited. *R1, R2, R3*
- g. Configure the IP addresses listed in the Addressing Table for all interfaces. DCE interfaces should be configured with a clock rate of 128000. Bandwidth should be set to 128 Kb/s on all serial interfaces. *R1, R2, R3*
- h. Copy the running configuration to the startup configuration.

20 20/

Task 3: Configure a Multiarea OSPFv2 Network

In Part 2, you will configure a multiarea OSPFv2 network with process ID of 1. All LAN loopback interfaces should be passive, and all serial interfaces should be configured with MD5 authentication using **Cisco123** as the key.

Step 1: Identify the OSPF router types in the topology.

(8 Marks)

Identify the Backbone router(s): R1, R2

Identify the Autonomous System Boundary Router(s) R1

(ASBR): Identify the Area Border Router(s) (ABR): R1, R2

Identify the Internal router(s): R3

8/8 ✓

Step 2: Configure OSPF on R1.

(15 Marks)

- Configure a router ID of 1.1.1.1 with OSPF process ID of 1. ✓
- Add the networks to the correct area for R1 to OSPF. ✓
- Set all LAN loopback interfaces, Lo1 and Lo2, as passive. ✓
- Create a default route to the Internet using exit interface Lo0. ✓
- Configure OSPF to propagate the routes throughout the OSPF areas. ✓

15/15 ✓

Step 3: Configure OSPF on R2.

(10 Marks)

- Configure a router ID of 2.2.2.2 with OSPF process ID of 1. ✓
- Add the networks for R2 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10/10 ✓

Step 4: Configure OSPF on R3.

(10 Marks)

- Configure a router ID of 3.3.3.3 with OSPF process ID of 1. ✓
- Add the networks for R3 to OSPF. Add the networks to the correct area. ✓
- Set all LAN loopback interfaces as passive. ✓

10/10 ✓

Step 5: Configure MD5 authentication on all serial interfaces.

(15 Marks)

Configure OSPF MD5 authentication at the interface level with an authentication key of **Cisco123**.

9/9 ✓

$$192 \cdot 168 \cdot 1 \cdot 0$$

$$- 2 \cdot 0$$

128	64	32	16	8	4	2	1
0	0	0	0	0	0	1	0
0	0	0	0	0	0	1	0

$$192 \cdot 168 \cdot 4 \cdot 0 / 22$$

$$255 \cdot 255 \cdot 252 \cdot 0$$

$$192 \cdot 168 \cdot 4 \cdot 0$$

$$\cdot 5$$

$$\cdot 6$$

$$\cdot 23$$

128	64	32	16	8	4	2	1
0	0	0	0	0	1	0	0
0	0	0	0	0	1	0	1
0	0	0	0	0	1	1	0
0	0	0	1	0	1	1	1

$$192 \cdot 168 \cdot 32 \cdot 0 / 19$$

$$\cancel{21}$$

$$92$$

$$255 \cdot 255 \cdot 224 \cdot 0$$

$$\cancel{236}$$

Task 3: Configure Interarea Summary Routes

Step 1: Configure the interarea summary routes.

(10 Marks)

- Calculate the summary route for the networks in area 1. ✗
- Configure the summary route for area 1 on R1. ✓
- Calculate the summary route for the networks in area 3. 0
- Configure the summary route for area 3 on R2. ✓

5
✓

Step 6: Verify end-to-end connectivity.

Verify that all networks can be reached from each router.

Task 4: Verify Layer 3 connectivity.

(6 Marks)

Routers	Result
R1 to R2	✓
R1 to R3	✓
R2 to R1	✓
R2 to R3	✓
R3 to R1	✓
R3 to R2	✓

6
✓

Submission Requirement

On each device, issue the following commands and capture the configurations. Save the file as devicename surname Pno.txt.

show run
show ip protocols
show ip ospf neighbor
show ip ospf database
show ip route ospf

All documentation for your solution should be submitted via USB.
It is your responsibility that you copy all the outputs and files correctly.

Diwedd/End

