



**DEPARTAMENTO DE ELETRÓNICA, TELECOMUNICAÇÕES
E INFORMÁTICA**

LICENCIATURA EM ENGENHARIA DE COMPUTADORES E INFORMÁTICA

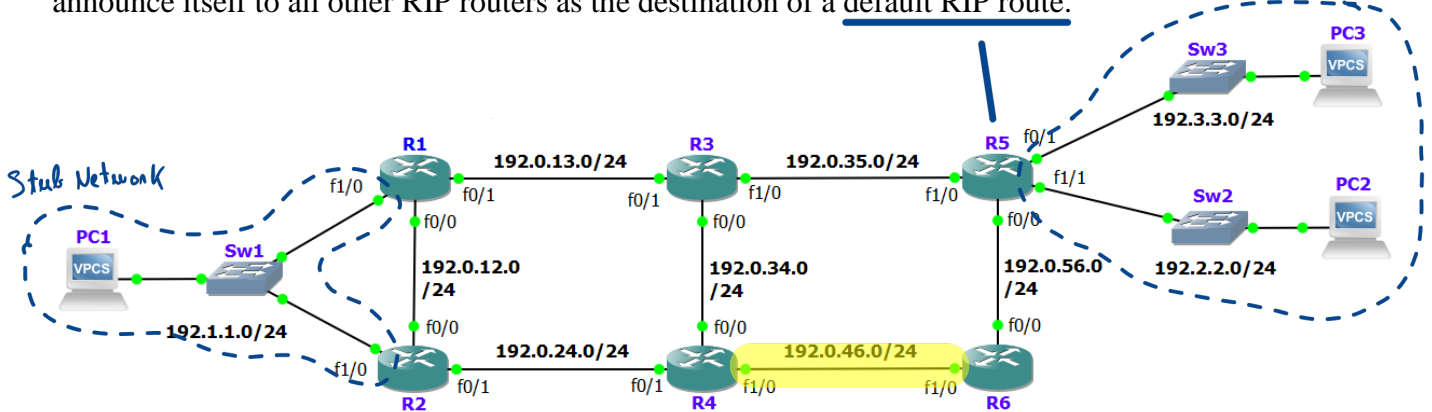
ANO 2024/2025

REDES DE COMUNICAÇÕES II

**STUDENTS AUTO-EVALUATION
OF LABORATORY GUIDE No. 2**

Scenario 1

Consider the following network with all IP addresses assigned as defined in Laboratory Guide no. 2. Consider that all routers are configured with the **RIPv2 protocol, with split-horizon**, and all networks except the ones associated with Sw2 and Sw3 are in the RIP processes of the routers. Consider that the IP network of Sw1 is configured in R1 and R2 as a stub network. Consider that R5 is configured to announce itself to all other RIP routers as the destination of a default RIP route.



Classify as True (T) or False (F) each of the following statements:

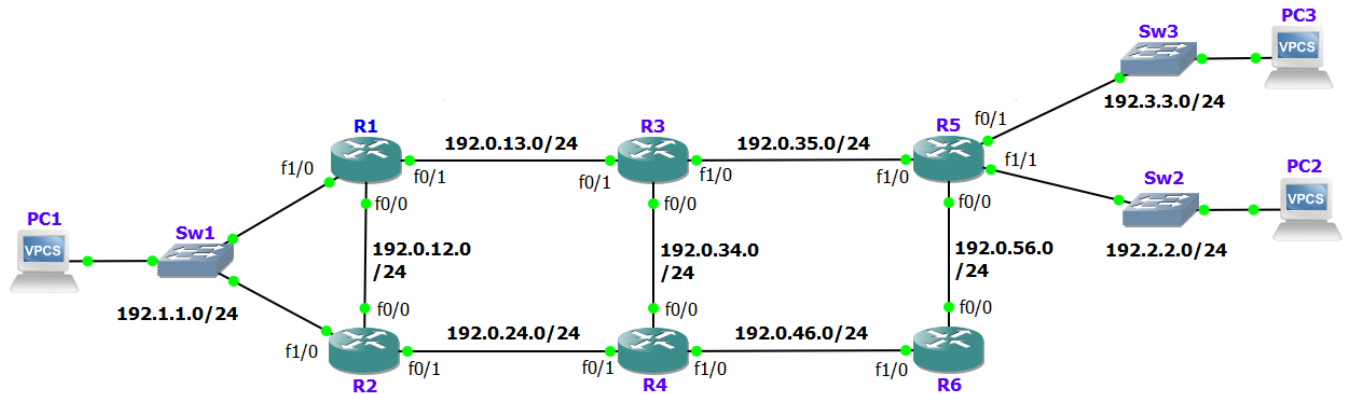
- ☐ F a) The IP routing table of R1 has the following RIP entry:
 \times_c 192.3.3.0/24 [120/2] via 192.0.13.3, f0/1 *As redes relacionadas com SW3 e SW6 não estão configuradas com RIPv2.*
- ☐ T b) The IP routing table of R6 has the following RIP entry:
 R 192.0.13.0/24 [120/2] via 192.0.56.5, f0/0 ✓
 [120/2] via 192.0.46.4, f1/0 ✓
- ☐ F c) The IP routing table of R4 has the following RIP entry:
 R* 0.0.0.0/0 [120/2] via 192.0.46.6, f1/0
- ☐ F d) The IP routing table of R3 has the following RIP entry:
 R 192.0.46.0/24 [120/2] via 192.0.35.5, f1/0
 $\times 1$ $\times 34.4$ $\times 0/0$
- ☐ T e) The RIP Response messages sent by R5 through interface f1/0 include network 192.0.46.0/24 with metric 2.
- ☐ T f) The RIP Response messages sent by R2 through interface f0/0 contain 5 IP networks. *{ 3 interfaces próprias + 2 interfaces vizinhas }*
- ☐ T g) If interface f1/0 of R3 is shutdown, the RIP entry of R1 to 192.0.46.0 does not change. ✓

RIP
 R 100.19.65.0/24 [120/1] via 100.12.0.10, 00:00:11, F0/0
 Rede Destino AD: Rede (custo) Termo de atualização
 Próximo salto Int. do próximo router que está a enviar os pacotes

Resolução

Scenario 1

Consider the following network with all IP addresses assigned as defined in Laboratory Guide no. 2. Consider that all routers are configured with the RIPv2 protocol, with split-horizon, and all networks except the ones associated with Sw2 and Sw3 are in the RIP processes of the routers. Consider that the IP network of Sw1 is configured in R1 and R2 as a stub network. Consider that R5 is configured to announce itself to all other RIP routers as the destination of a default RIP route.

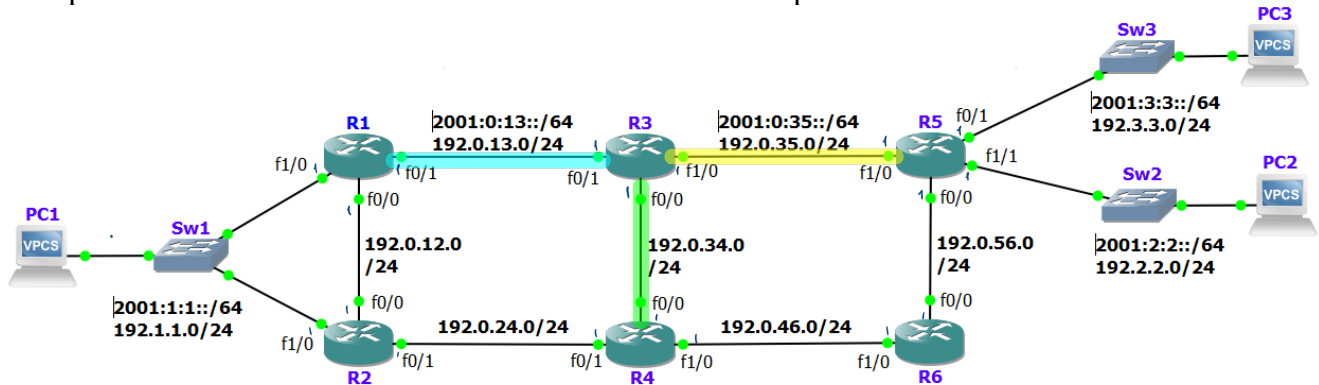


Classify as True (T) or False (F) each of the following statements:

- ☒ F a) The IP routing table of R1 has the following RIP entry:
R 192.3.3.0/24 [120/2] via 192.0.13.3, f0/1
- ☒ T b) The IP routing table of R6 has the following RIP entry:
R 192.0.13.0/24 [120/2] via 192.0.56.5, f0/0
[120/2] via 192.0.46.4, f1/0
- ☒ F c) The IP routing table of R4 has the following RIP entry:
R* 0.0.0.0/0 [120/2] via 192.0.46.6, f1/0
- ☒ F d) The IP routing table of R3 has the following RIP entry:
R 192.0.46.0/24 [120/2] via 192.0.35.5, f1/0
- ☒ T e) The RIP Response messages sent by R5 through interface f1/0 include network 192.0.46.0/24 with metric 2.
- ☒ T f) The RIP Response messages sent by R2 through interface f0/0 contain 5 IP networks.
- ☒ T g) If interface f1/0 of R3 is shutdown, the RIP entry of R1 to 192.0.46.0 does not change.

Scenario 2

Consider the following network with all IPv4 and IPv6 addresses assigned as defined in Laboratory Guide no. 2. All routers are configured with one OSPFv2 process in area 0 and routers R1, R3 and R5 are configured with one OSPFv3 process in area 0. In both protocols, all networks except the ones associated with Sw2 and Sw3 are included in the OSPF processes and the networks of Sw1 are configured as stub networks. R5 is configured to announce itself as the destination of a default route in both protocols. The OSPF costs of all interfaces are 1 in both protocols.



One of the Router Links states of the OSPFv2 database is:

LS age: 1053

Options: (No TOS-capability, DC)

LS Type: Router Links

Link State ID: 192.0.35.3

Advertising Router: 192.0.35.3 → R3

LS Seq Number: 80000005

Checksum: 0x104

Length: 60

Number of Links: 3

Link connected to: a Transit Network

(Link ID) Designated Router address: 192.0.35.5 — O router 5 é o DR da rede 192.0.35.0/24

(Link Data) Router Interface address: 192.0.35.3

TOS 0 Metrics: 1

8110 (R3)

Link connected to: a Transit Network

(Link ID) Designated Router address: 192.0.13.1 } R1 é o DR da rede 192.0.13.0/24

(Link Data) Router Interface address: 192.0.13.3 } O IP da interface do router que liga ao DR (8011 (R3))

TOS 0 Metrics: 1

Link connected to: a Transit Network

(Link ID) Designated Router address: 192.0.34.4 — R4

(Link Data) Router Interface address: 192.0.34.3

TOS 0 Metrics: 1

8010 (R3)

Classify as True (T) or False (F) each of the following statements:

☐ F

a) The IPv4 routing table of R1 has the following OSPF entry:

o 192.0.46.0/24 [110/4] via 192.0.13.3, f0/1
[110/4] via 192.0.12.2, f0/0

3

Interface que sai

☐ F

b) The IPv6 routing table of R3 has the following OSPF entry:

o 2001:2:2::/64 [110/2] via FE80::C805:16FF:FE40:1C, f1/0

3

Número de Interface que o prefix passa

☐ F

c) The IPv6 routing table of R5 has the following OSPF entry:

o 2001:1:1::/64 [110/3] via 2001:0:35::3, f1/0

↑
FE80::

Nota

OSPFv3 é sempre Link-Local Address

