



**DEPARTAMENTO DE ELETRÓNICA, TELECOMUNICAÇÕES  
E INFORMÁTICA**

**LICENCIATURA EM ENGENHARIA DE COMPUTADORES E INFORMÁTICA**

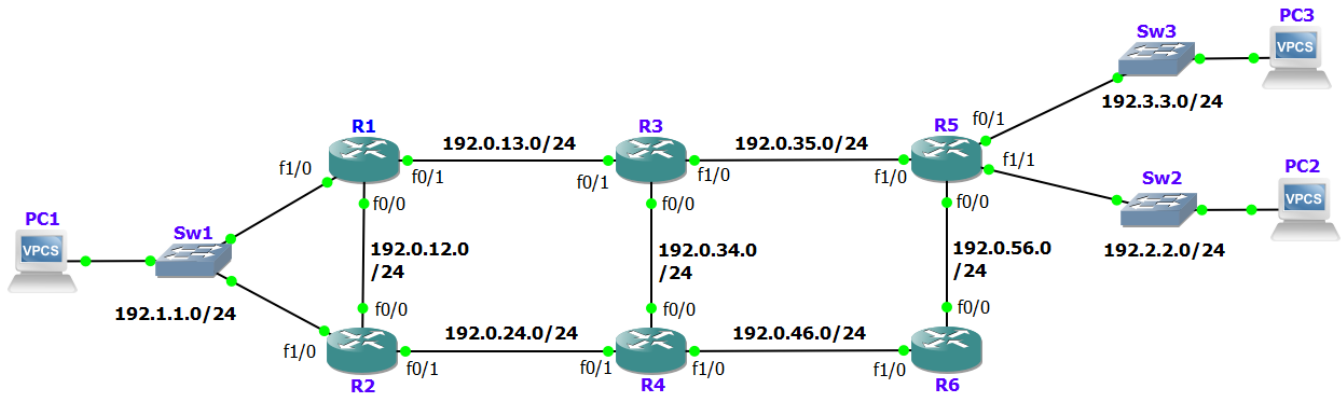
**ANO 2024/2025**

**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.

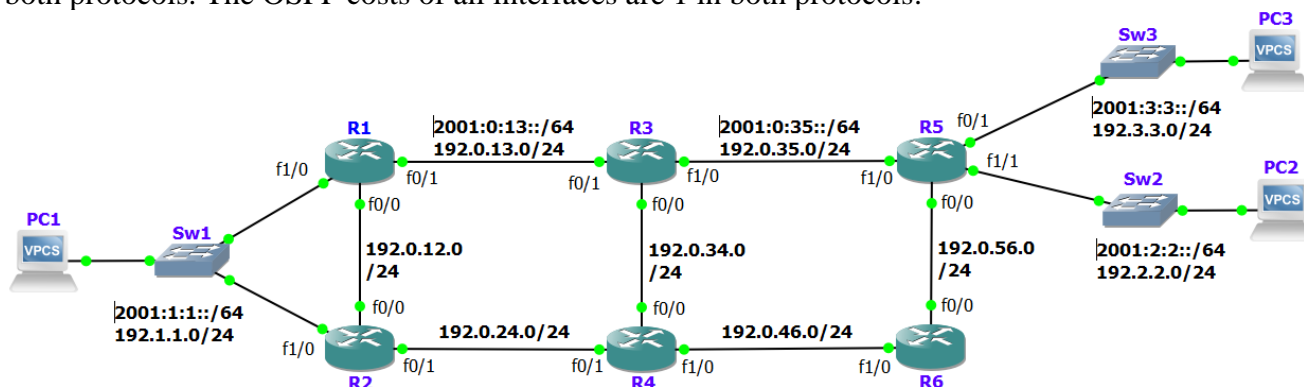


Classify as True (T) or False (F) each of the following statements:

- ☐ 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
- ☐ 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
- ☐ 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
- ☐ 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
- ☐ e) The RIP Response messages sent by R5 through interface f1/0 include network 192.0.46.0/24 with metric 2.
- ☐ f) The RIP Response messages sent by R2 through interface f0/0 contain 5 IP networks.
- ☐ 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
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
(Link Data) Router Interface address: 192.0.35.3
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.0.13.1
(Link Data) Router Interface address: 192.0.13.3
TOS 0 Metrics: 1

Link connected to: a Transit Network
(Link ID) Designated Router address: 192.0.34.4
(Link Data) Router Interface address: 192.0.34.3
TOS 0 Metrics: 1
```

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

- ☐ a) The IPv4 routing table of R1 has the following OSPF entry:
- ☐ 192.0.46.0/24 [110/4] via 192.0.13.3, f0/1
  - ☐ [110/4] via 192.0.12.2, f0/0
- ☐ b) The IPv6 routing table of R3 has the following OSPF entry:
- ☐ 2001:2:2::/64 [110/2] via FE80::C805:16FF:FE40:1C, f1/0
- ☐ c) The IPv6 routing table of R5 has the following OSPF entry:
- ☐ 2001:1:1::/64 [110/3] via 2001:0:35::3, f1/0

☐ d) The database of the OSPFv2 process has 6 Router Link States.

☐ e) The database of the OSPFv3 process has 3 Net Link States.

☐ f) R5 is the Designated Router of the network 192.0.35.0/24.

☐ g) If the IPv4 routing table of R4 has the following OSPF entry:

```
O*E1  0.0.0.0/0 [110/3] via 192.0.46.6, f1/0
      [110/3] via 192.0.34.3, f0/0
```

it means that the default route in R5 was configured as an external route of type E2 with an external cost of 1.

☐ h) The database of the OSPFv2 process has 6 Router Link States.

☐ i) The database of the OSPFv3 process has 3 Net Link States.

☐ j) If the OSPF cost of interface f0/1 of R2 is changed to 2, the IPv4 routing table of R2 will have the following OSPF entry:

```
O      192.0.34.0/24 [110/3] via 192.0.24.4, f0/1
      [110/3] via 192.0.12.1, f0/0
```