COMP9332 Network Routing and Switching
Solution of Self-assessed Tutorial for OSPF

In this tutorial, you'll solve some of the questions from Forouzan (3rd Ed. Forouzan, pages 433-434).

A17.

OSPF Header: Type 4 (Link state update)
LSA Header: Type 1 (Router link)
# of links: 2

For the point-to-point link:

Link ID: Address of Router D
Link data: 1 (assuming the link is connected via interface 1)
Link type: 1
# of TOS: 1
Metric for TOS 0: 8

For the transient link

Link ID: Address of Router A (assuming A is the designated router)
Link data: Address of Router A (the address used for this interface)
Link type: 2
# of TOS: 1
Metric for TOS 0: 5

A18.

OSPF Header: Type 4 (Link state update)
LSA Header: Type 1 (Router link)
# of links: 2

For the point-to-point link:

Link ID: Address of Router A
Link data: 1 (assuming the link is connected via interface 1)
Link type: 1
# of TOS: 1
Metric for TOS 0: 8

For the transient link

Link ID: Address of Router E (assuming E is the designated router)

Link data: Address of Router D (the address used for this interface)
Link type: 2
# of TOS: 1
Metric for TOS 0: 2

A19.

OSPF Header: Type 4 (Link state update)
LSA Header: Type 1 (Router link)
# of links: 3

For the point-to-point link:

Link ID: Address of Router B
Link data: 1 (assuming the link is connected via interface 1)
Link type: 1
# of TOS: 1
Metric for TOS 0: 4

For the transient link to N3

Link ID: Address of Router E (assuming E is the designated router)
Link data: Address of Router E (the address used for this interface)
Link type: 2
# of TOS: 1
Metric for TOS 0: 5

For the stub link to N4

Link ID: N4 (Address of N4)
Link data: network Mask for N4
Link type: 3
# of TOS: 1
Metric for TOS 0: 2

A20.

OSPF Header: Type 4 (Link state update)
LSA Header: Type 2 (Network link)
Network Mask: Network Mask of net2
Attached router: address of Router C

A21.
OSPF Header: Type 4 (Link state update)

LSA Header: Type 2 (Network link)
Network Mask: Network Mask of net4
Attached router: address of Router E

A22.

OSPF Header: Type 4 (Link state update)
LSA Header: Type 2 (Network link)
Network Mask: Network Mask of net5
Attached router: address of Router F

A23.

The advertisement is the same irrespective of who is the designated router (but it is the designated router who advertises the update).

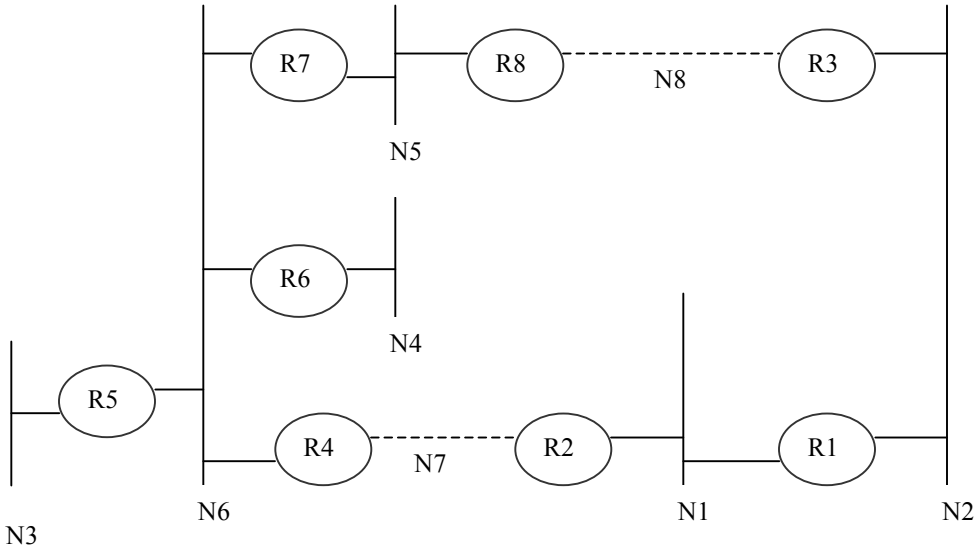
OSPF Header: Type 4 (Link state update)
LSA Header: Type 2 (Network link)
Network Mask: Network Mask of net1
Attached router: address of Router A
Attached router: address of Router B
Attached router: address of Router C

A24.

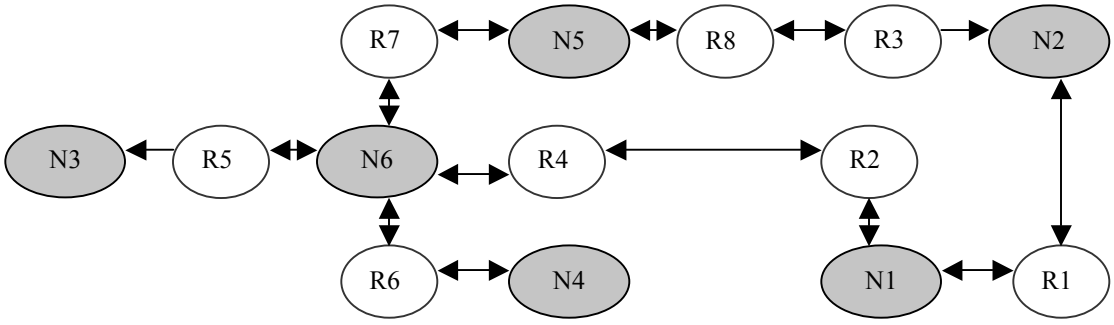
The advertisement is the same irrespective of who is the designated router (but it is the designated router who advertises the update).

OSPF Header: Type 4 (Link state update)
LSA Header: Type 2 (Network link)
Network Mask: Network Mask of net3
Attached router: address of Router D
Attached router: address of Router E
Attached router: address of Router F

A29.


R7
R8
N8
R3
N5
R6
N4
R5
R4
N7
R2
R1
N3
N6
N1
N2

A30.


R7
N5
R8
R3
N2
N3
R5
N6
R4
R2
R6
N4
N1
R1