COL334 Eval A3-A4 Part A

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Q1 Routing Tables

T = 29 secs

1. Node A

```
Node: 2, Time: +29.0s, Local time: +29.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 2, Time: +29.0s, Local time: +29.0s, IPv4 RIP table
                                                  Flags Metric Ref
Destination
                 Gateway
                                                                       Use Iface
                                  Genmask
                                  255.255.255.0
10.0.5.0
                 10.0.1.2
                                                  UGS
                                                         2
                                                                            2
10.0.6.0
                 10.0.1.2
                                  255.255.255.0
                                                  UGS
                                                         3
                                                                            2
10.0.4.0
                 10.0.2.2
                                  255.255.255.0
                                                  UGS
                                                         2
                                                                           3
                                                         2
10.0.3.0
                 10.0.2.2
                                  255.255.255.0
                                                  UGS
                                                                           3
                                  255.255.255.0
10.0.0.0
                 0.0.0.0
                                                  U
                                                         1
                                                                           1
10.0.1.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                                            2
                                                         1
10.0.2.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                                            3
                                                         1
```

2. Node B

```
Node: 3, Time: +29.0s, Local time: +29.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 3, Time: +29.0s, Local time: +29.0s, IPv4 RIP table
Destination
                Gateway
                                 Genmask
                                                  Flags Metric Ref
                                                                       Use Iface
                10.0.5.2
10.0.6.0
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           3
10.0.4.0
                10.0.3.2
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           2
10.0.2.0
                10.0.1.1
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           1
10.0.0.0
                10.0.1.1
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           1
10.0.1.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           1
10.0.3.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           2
10.0.5.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           3
```

3. Node C

```
Node: 4, Time: +29.0s, Local time: +29.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 4, Time: +29.0s, Local time: +29.0s, IPv4 RIP table
                Gateway
                                                  Flags Metric Ref
Destination
                                 Genmask
                                                                       Use Iface
10.0.6.0
                 10.0.3.1
                                  255.255.255.0
                                                  UGS
                                                        3
                                                                           2
10.0.5.0
                 10.0.3.1
                                 255.255.255.0
                                                  UGS
                                                                           2
                                                        2
                                  255.255.255.0
                                                  UGS
                                                        2
10.0.1.0
                 10.0.2.1
                                                                           1
                                  255.255.255.0
                                                  UGS
                                                        2
                                                                           1
10.0.0.0
                 10.0.2.1
                                                                           1
                 0.0.0.0
                                  255.255.255.0
10.0.2.0
                                                  U
                                                        1
                                                                           2
10.0.3.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
                                                         1
                                                                           3
10.0.4.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
```

4. Node D

```
Node: 5, Time: +29.0s, Local time: +29.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 5, Time: +29.0s, Local time: +29.0s, IPv4 RIP table
Destination
                                                  Flags Metric Ref
                                                                       Use Iface
                 Gateway
                                  Genmask
10.0.3.0
                 10.0.5.1
                                  255.255.255.0
                                                  UGS
                                                         2
                                                                            2
10.0.2.0
                 10.0.5.1
                                  255.255.255.0
                                                  UGS
                                                         3
                                                                            2
10.0.0.0
                 10.0.5.1
                                  255.255.255.0
                                                  UGS
                                                                            2
                                                         3
10.0.1.0
                 10.0.5.1
                                  255.255.255.0
                                                  UGS
                                                                            2
                                                         2
10.0.4.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                                            1
                                                         1
10.0.5.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
                                                                            2
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
                                                                            3
10.0.6.0
```

T = 79secs

1. Node A

Node: 2, Time: +79.0s, Local time: +79.0s, Ipv4ListRouting table											
Priority: 0 Protocol: ns3::Rip											
Node: 2, Time:	: +79.0s, Local	time: +79.0s, IPv4	RIP to	able							
Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface				
10.0.4.0	10.0.1.2	255.255.255.0	UGS	16			2				
10.0.3.0	10.0.2.2	255.255.255.0	UGS	2			3				
10.0.0.0	0.0.0.0	255.255.255.0	U	1			1				
10.0.1.0	0.0.0.0	255.255.255.0		1			2				
10.0.2.0	0.0.0.0	255.255.255.0	U	1			3				

2. Node B

```
Node: 3, Time: +79.0s, Local time: +79.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 3, Time: +79.0s, Local time: +79.0s, IPv4 RIP table
Destination
                 Gateway
                                  Genmask
                                                   Flags Metric Ref
                                                                        Use Iface
10.0.6.0
                 10.0.1.1
                                  255.255.255.0
                                                   UGS
                                                         16
                                                                            1
10.0.4.0
                 10.0.1.1
                                  255.255.255.0
                                                   UGS
                                                         16
                                                                            1
                                                   UGS
10.0.2.0
                 10.0.1.1
                                  255.255.255.0
                                                         2
                                                                            1
10.0.0.0
                                  255.255.255.0
                                                   UGS
                                                         2
                                                                            1
                 10.0.1.1
                 0.0.0.0
                                  255.255.255.0
                                                                            1
10.0.1.0
                                                   U
                                                         1
                                                                            2
10.0.3.0
                                  255.255.255.0
                                                   U
                 0.0.0.0
                                                         1
10.0.5.0
                 10.0.1.1
                                                  UGS
                                                                            1
                                  255.255.255.0
                                                         16
```

3. Node C

```
Node: 4, Time: +79.0s, Local time: +79.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 4, Time: +79.0s, Local time: +79.0s, IPv4 RIP table
Destination
                Gateway
                                 Genmask
                                                  Flags Metric Ref
                                                                       Use Iface
10.0.1.0
                10.0.2.1
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           1
10.0.0.0
                                                        2
                10.0.2.1
                                 255.255.255.0
                                                  UGS
                                                                           1
                                                                           1
10.0.2.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           2
10.0.3.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
10.0.4.0
                10.0.2.1
                                 255.255.255.0
                                                  UGS
                                                        16
                                                                           1
```

4. Node D

```
Node: 5, Time: +79.0s, Local time: +79.0s, Ipv4ListRouting table
Priority: 0 Protocol: ns3::Rip
Node: 5, Time: +79.0s, Local time: +79.0s, IPv4 RIP table
Destination Gateway Genmask Flags Metric Ref Use Iface
10.0.6.0 0.0.0.0 255.255.255.0 U 1 - - 3
```

T = 149 secs

1. Node A

```
Node: 2, Time: +149.0s, Local time: +149.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 2, Time: +149.0s, Local time: +149.0s, IPv4 RIP table
Destination
                 Gateway
                                  Genmask
                                                   Flags Metric Ref
                                                                        Use Iface
10.0.6.0
                 10.0.2.2
                                  255.255.255.0
                                                  UGS
                                                         12
                                                                            3
10.0.4.0
                 10.0.2.2
                                  255.255.255.0
                                                  UGS
                                                         2
                                                                            3
                                                                            3
10.0.3.0
                 10.0.2.2
                                  255.255.255.0
                                                  UGS
                                                         2
                                                                            1
10.0.0.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
10.0.1.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
                                                                            2
10.0.2.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
                                                                            3
```

2. Node B

```
Node: 3, Time: +149.0s, Local time: +149.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 3, Time: +149.0s, Local time: +149.0s, IPv4 RIP table
Destination
                 Gateway
                                 Genmask
                                                   Flags Metric Ref
                                                                        Use Iface
10.0.6.0
                 10.0.3.2
                                  255.255.255.0
                                                  UGS
                                                         12
                                                                            2
10.0.4.0
                                  255.255.255.0
                                                  UGS
                                                                            2
                 10.0.3.2
                                                         2
                                                         2
10.0.2.0
                 10.0.1.1
                                  255.255.255.0
                                                  UGS
                                                                            1
10.0.0.0
                 10.0.1.1
                                  255.255.255.0
                                                  UGS
                                                         2
                                                                            1
10.0.1.0
                 0.0.0.0
                                  255.255.255.0
                                                  U
                                                         1
                                                                            1
                                  255.255.255.0
                                                                            2
10.0.3.0
                 0.0.0.0
                                                  Ш
                                                         1
                 10.0.1.1
                                  255.255.255.0
                                                  UGS
10.0.5.0
                                                                            1
                                                         16
```

3. Node C

```
Node: 4, Time: +149.0s, Local time: +149.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 4, Time: +149.0s, Local time: +149.0s, IPv4 RIP table
                                                  Flags Metric Ref
Destination
                 Gateway
                                 Genmask
                                                                       Use Iface
10.0.6.0
                 10.0.4.2
                                 255.255.255.0
                                                  UGS
                                                         11
                                                                           3
                 10.0.2.1
10.0.1.0
                                 255.255.255.0
                                                  UGS
                                                                           1
                                                         2
                                 255.255.255.0
10.0.0.0
                                                  UGS
                                                         2
                                                                           1
                 10.0.2.1
10.0.2.0
                                 255.255.255.0
                                                  U
                                                                           1
                 0.0.0.0
                                                         1
                                 255.255.255.0
                                                                           2
10.0.3.0
                 0.0.0.0
                                                  U
                                                         1
                                                  UGS
                                 255.255.255.0
                                                                           1
10.0.4.0
                 10.0.2.1
                                                         16
10.0.4.0
                                 255.255.255.0
                                                                            3
                 0.0.0.0
                                                  U
                                                         1
```

4. Node D

```
Node: 5, Time: +149.0s, Local time: +149.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 5, Time: +149.0s, Local time: +149.0s, IPv4 RIP table
Destination
                                                  Flags Metric Ref
                                                                       Use Iface
                Gateway
                                 Genmask
10.0.3.0
                 10.0.4.1
                                 255.255.255.0
                                                  UGS
                                                        11
                                                                           1
10.0.2.0
                                 255.255.255.0
                                                  UGS
                 10.0.4.1
                                                        11
                                                                           1
10.0.0.0
                                 255.255.255.0
                                                  UGS
                                                                           1
                 10.0.4.1
                                                        12
10.0.1.0
                                 255.255.255.0
                                                  UGS
                                                                           1
                 10.0.4.1
                                                        12
10.0.5.0
                                 255.255.255.0
                                                  UGS
                                                                           1
                10.0.4.1
                                                        16
10.0.6.0
                0.0.0.0
                                 255.255.255.0
                                                                           3
                                                  U
                                                        1
10.0.4.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           1
```

T = 280secs

1. Node A

Node: 2, Time	: +280.0s, Loca	l time: +280.0s, I	pv4ListF	Routing	table						
Priority: 0 Protocol: ns3::Rip											
Node: 2, Time	: +280.0s, Loca	l time: +280.0s, I	Pv4 RIP	table							
Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface				
10.0.5.0	10.0.1.2	255.255.255.0	UGS	2			2				
10.0.6.0	10.0.1.2	255.255.255.0	UGS	3			2				
10.0.4.0	10.0.2.2	255.255.255.0	UGS	2			3				
10.0.3.0	10.0.2.2	255.255.255.0	UGS	2			3				
10.0.0.0	0.0.0.0	255.255.255.0	U	1			1				
10.0.1.0	0.0.0.0	255.255.255.0	U	1			2				
10.0.2.0	0.0.0.0	255.255.255.0	U	1			3				

2. Node B

```
Node: 3, Time: +280.0s, Local time: +280.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 3, Time: +280.0s, Local time: +280.0s, IPv4 RIP table
Destination
                                 Genmask
                                                  Flags Metric Ref
                                                                       Use Iface
                 Gateway
10.0.6.0
                 10.0.5.2
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           3
                                 255.255.255.0
10.0.4.0
                10.0.3.2
                                                                           2
                                                  UGS
                                                        2
10.0.2.0
                 10.0.1.1
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           1
10.0.0.0
                 10.0.1.1
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           1
10.0.1.0
                 0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           2
10.0.3.0
                                 255.255.255.0
                0.0.0.0
                                                  U
                                                        1
10.0.5.0
                 10.0.1.1
                                 255.255.255.0
                                                  UGS
                                                                           1
                                                        16
10.0.5.0
                 0.0.0.0
                                 255.255.255.0
                                                        1
                                                  U
```

3. Node C

```
Node: 4, Time: +280.0s, Local time: +280.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 4, Time: +280.0s, Local time: +280.0s, IPv4 RIP table
Destination
                                                  Flags Metric Ref
                                                                      Use Iface
                Gateway
                                 Genmask
                                 255.255.255.0
10.0.6.0
                 10.0.3.1
                                                  UGS
                                                                           2
                                                        3
                                 255.255.255.0
                                                  UGS
                                                        2
                                                                           2
10.0.5.0
                10.0.3.1
                                                        2
10.0.1.0
                10.0.2.1
                                 255.255.255.0
                                                  UGS
                                                                           1
                                                        2
10.0.0.0
                10.0.2.1
                                 255.255.255.0
                                                  UGS
                                                                           1
10.0.2.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           1
10.0.3.0
                                                                           2
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
10.0.4.0
                10.0.2.1
                                 255.255.255.0
                                                  UGS
                                                        16
                                                                           1
10.0.4.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           3
```

4. Node D

```
Node: 5, Time: +280.0s, Local time: +280.0s, Ipv4ListRouting table
  Priority: 0 Protocol: ns3::Rip
Node: 5, Time: +280.0s, Local time: +280.0s, IPv4 RIP table
Destination
                                                                      Use Iface
                Gateway
                                 Genmask
                                                  Flags Metric Ref
                                 255.255.255.0
10.0.3.0
                10.0.5.1
                                                 UGS
                                                        2
                                                                           2
10.0.2.0
                                 255.255.255.0
                                                        3
                                                                           2
                10.0.5.1
                                                 UGS
                                                                           2
                                 255.255.255.0
                                                 UGS
                                                        3
10.0.0.0
                10.0.5.1
                                                                           2
10.0.1.0
                                 255.255.255.0
                                                 UGS
                                                        2
                10.0.5.1
                                 255.255.255.0
                                                 UGS
10.0.5.0
                10.0.4.1
                                                        12
                                                                          3
10.0.6.0
                0.0.0.0
                                 255.255.255.0
                                                 U
                                                        1
10.0.4.0
                0.0.0.0
                                 255.255.255.0
                                                  U
                                                        1
                                                                           1
10.0.5.0
                0.0.0.0
                                 255.255.255.0
                                                  U
```

Q2 At t = 79secs the destination becomes unreachable as both the links to D had been broken at t = 30secs. At t = 149secs, the destination again becomes reachable due to link C-D which comes back at t = 80secs but the cost metric is high. At t = 280secs, all the links are back up and the situation is similar to t = 29secs.

All the tables have converged at t = 280secs and t = 29secs. Whereas destination is not reachable at t = 79secs while it is at t = 29secs. Also at t - 29secs, metric is less than t = 149secs for reaching all the nodes.

Command to run code -

./waf -run scratch/2019PH10629 partb