Started on	Monday, 26 September 2022, 12:38 PM
State	Finished
Completed on	Monday, 26 September 2022, 12:45 PM
Time taken	7 mins 25 secs
Grade	**34.67** out of 38.00 (**91.23**%)

Question 1

Complete

Mark 1.00 out of 1.00

An ARP request is _____ to _____.

- ○ a. Unicast; one host
- ○ b. Unicast; all hosts
- ○ c. Multicast; one host
- ◉ d. Broadcast; all hosts
- ○ e. Broadcast; one host

Your answer is correct.

The correct answer is:
Broadcast; all hosts

Question 2

Complete

Mark 4.00 out of 4.00

Consider the information received from traceroute command below:

tracert www.google.com

Tracing route to www.google.com [27.123.17.42]
over a maximum of 30 hops:

1	1 ms	1 ms	1 ms	true.true [192.168.3.1]
2	33 ms	33 ms	34 ms	10.169.223.30
3	*	*	*	Request timed out.
4	2897 ms	1532 ms	*	10.100.40.52
5	*	*	2924 ms	58-97-121-1.static.asianet.co.th [58.97.121.1]
6	222 ms	628 ms	*	61-91-213-177.static.asianet.co.th [61.91.213.177]
7	*	*	980 ms	61-91-213-36.static.asianet.co.th [61.91.213.36]
8	582 ms	80 ms	403 ms	61-91-213-130.static.asianet.co.th [61.91.213.130]
9	46 ms	*	34 ms	tig-net17-42.trueintergateway.com [27.123.17.42]

Trace complete.

1. This command was executed on Windows or Unix?

Answer: Windows

2. Is the traceroute to google.com done with success?

Answer: Yes

3. What is the IP address of the default gateway of the computer that run the tracert command?
Answer:

192.168.3.1

4. How many hops do we need to arrive the google.com?
Answer:

9

Question 3

Complete

Mark 1.00 out of 1.00

Which statement is correct regarding the operation of DHCP?

○ a.   If an address conflict is detected, the address is removed from the pool and will not be reused until the server is rebooted.

○ b.   A DHCP client uses a ping to detect address conflicts.

○ c.   A DHCP client uses a gratuitous ARP to detect a DHCP server.

○ d.   A DHCP server uses a gratuitous ARP to detect DHCP clients.

◉ e.   If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict.

○ f.   If an address conflict is detected, the address is removed from the pool for an amount of time configurable by the administrator.
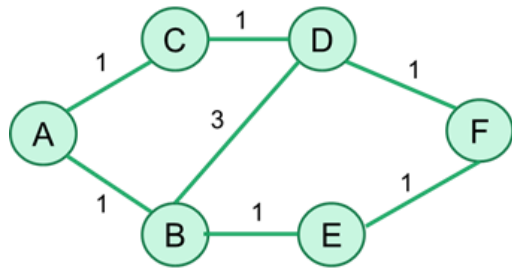
Your answer is correct.

The correct answer is:
If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict.

Question 4

Complete

Mark 6.67 out of 8.00

From the figure below, use the **Bellman-Ford Algorithm** to find the distance vectors or the routing tables according to each advertisement.

a. Find the distance vector for node A, C, and B <u>at the initial step</u>.

Node A			Node B			Node C	
Destination	Cost		Destination	Cost		Destination	Cost
A	0		A	1		A	1
B	1		B	0		B	infinity
C	1		C	infinity		C	0
D	infinity		D	3		D	1
E	infinity		E	1		E	infinity
F	infinity		F	infinity		F	infinity

b. Find the distance vector for <u>node A</u>, after A has got an advertisement <u>from B</u>.

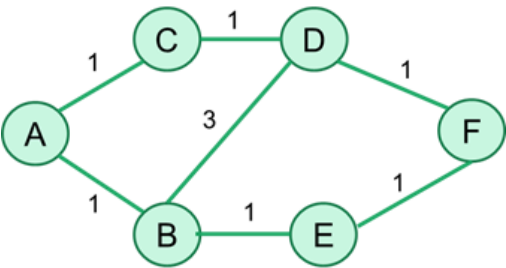| Node A (Updated)	
Destination	Cost
A	0
B	none
C	1
D	2
E	4

F	
	3

Your answer is partially correct.

You have correctly selected 20.
The correct answer is:
From the figure below, use the **Bellman-Ford Algorithm** to find the distance vectors or the routing tables according to each advertisement.

a. Find the distance vector for node A, C, and B at the initial step.

Node A			Node B			Node C	
Destination	Cost		Destination	Cost		Destination	Cost
A	[0]		A	[1]		A	[1]
B	[1]		B	[0]		B	[infinity]
C	[1]		C	[infinity]		C	[0]
D	[infinity]		D	[3]		D	[1]
E	[infinity]		E	[1]		E	[infinity]
F	[infinity]		F	[infinity]		F	[infinity]

b. Find the distance vector for node A, after A has got an advertisement from B.

Node A (Updated)	
Destination	Cost
A	[0]
B	[1]
C	[1]
D	[4]
E	[2]
F	[infinity]

Question 5

Complete

Mark 2.00 out of 2.00

From Lab2 RIP, suppose the link between A1 and A2 is changed to **202.44.206.0/24** and Router_A2's IP addresses are configured as below.

Router_A2> enable
Router_A2# configure terminal
Router_A2(config)# interface fastEthernet0/0
Router_A2(config-if)# ip address 202.44.204.1 255.255.255.0
Router_A2(config-if)# no shutdown
Router_A2(config-if)# exit
Router_A2(config)# interface fastEthernet0/1
Router_A2(config-if)# ip address 202.44.206.1 255.255.255.0
Router_A2(config-if)# **XXX**
Router_A2(config-if)# exit

What should be the command input in **XXX**?

no shutdown

(note that, put only one space and use the full command, not the short one)

Next, we have to configure RIP on A2 to advertise the networks to other routers.

Router_A2# configure terminal
Router_A2(config)# router rip
Router_A2(config-router)# network 202.44.204.0
Router_A2(config-router)# network **YYY**
Router_A2(config-router)# exit

What should be input in **YYY** in the command above?

202.44.206.0

Question 6

Complete

Mark 5.00 out of 5.00

Assume that the shortest distance between nodes a, b, c, and d to node y and the costs from node x to nodes a, b, c, and d are given below:

D_{ay} = 5 D_{by} = 6 D_{cy} = 4 D_{dy} = 3 C_{xa} = 2 C_{xb} = 1 C_{xc} = 3 C_{xd} = 1

What is the shortest distance between node x and node y, Dxy, according to the **Bellman-Ford equation**?

Hints: D_{xy} = min { $(c_{xa} + D_{ay})$, $(c_{xb} + D_{by})$, $(c_{xc} + D_{cy})$, $(c_{xd} + D_{dy})$ }

$(c_{xa} + D_{ay})$ = | 7 |

$(c_{xb} + D_{by})$ = | 7 |

$(c_{xc} + D_{cy})$ = | 7 |

$(c_{xd} + D_{dy})$ = | 4 |

Therefore, D_{xy} = | 4 |

Your answer is correct.

The correct answer is:

Assume that the shortest distance between nodes a, b, c, and d to node y and the costs from node x to nodes a, b, c, and d are given below:

D_{ay} = 5 D_{by} = 6 D_{cy} = 4 D_{dy} = 3 C_{xa} = 2 C_{xb} = 1 C_{xc} = 3 C_{xd} = 1

What is the shortest distance between node x and node y, Dxy, according to the **Bellman-Ford equation**?

Hints: D_{xy} = min { $(c_{xa} + D_{ay})$, $(c_{xb} + D_{by})$, $(c_{xc} + D_{cy})$, $(c_{xd} + D_{dy})$ }

$(c_{xa} + D_{ay})$ = [7]

$(c_{xb} + D_{by})$ =[7]

$(c_{xc} + D_{cy})$ = [7]

$(c_{xd} + D_{dy})$ = [4]

Therefore, D_{xy} = [4]

Question 7

Complete

Mark 4.00 out of 5.00

Consider the following information obtained from ping command below:

```
C:\Users\ict>ping www.ict.mahidol.ac.th

Pinging www.ict.mahidol.ac.th [10.34.101.89] with 32 bytes of data:
Reply from 10.34.101.89: bytes=32 time<1ms TTL=97
Reply from 10.34.101.89: bytes=32 time<1ms TTL=97
Reply from 10.34.101.89: bytes=32 time<1ms TTL=97
Reply from 10.34.101.89: bytes=32 time<1ms TTL=97

Ping statistics for 10.34.101.89:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

1. What is the IP address of www.ict.mahidol.ac.th? Answer:

   10.34.101.89

2. What is the liveliness status of ICT Mahidol website? Answer: Reachable

3. If the original TTL value is set to be 100, how many hops has this ping message traveled to reach the destination? Answer:

   3

4. How many packets have been sent to www.ict.mahidol.ac.th? Answer:

   4

5. Can the value of TTL in a datagram equal to zero? Answer: Yes

Question 8

Complete

Mark 2.00 out of 2.00

In Lab2 OSPF, R1 has three network interfaces (LAN cards), with three IP addresses: 192.168.10.1/24, 10.1.1.1/30, and 10.1.1.5/30.

Therefore, when we configure OSPF on R1, we used the command as below.

Router_R1> enable
Router_R1# configure terminal
Router_R1(config)# router ospf 10
Router_R1(config-router)# router-id 1.1.1.1
Router_R1(config-router)# network 192.168.10.0 0.0.0.255 area 0
Router_R1(config-router)# network 10.1.1.0 0.0.0.3 area 0
Router_R1(config-router)# network 10.1.1.4 0.0.0.3 area 0

Suppose the IP address 192.168.10.1/24 is changed to 192.168.0.0/16, what should be the command to replace the **hi-lighted (bold)** command above?

Note that, please put only one space between each string.

Answer: | network 192.168.0.0 0.0.255.255 area 0 |

The correct answer is: network 192.168.0.0 0.0.255.255 area 0

Question 9

Complete

Mark 5.00 out of 5.00

Suppose the cost from Router B to E is 4 ($C_{BE} = 4$). Router E advertises its distance vector to Router B. Find a new distance vector of Router B.
Hints: See Slide 15 and 16 of Lecture 4

New Router B			Old Router B			Router E
A			A	2		A	∞
B			B	0		B	4
C			C	5		C	∞
D			D	∞		D	5
E			E	4		E	0
F			F	∞		F	2
G			G	∞		G	∞

What is the new cost of Router B for the destination A?   `2`

What is the new cost of Router B for the destination B?   `0`

What is the new cost of Router B for the destination C?   `5`

What is the new cost of Router B for the destination D?   `9`

What is the new cost of Router B for the destination E?   `4`

What is the new cost of Router B for the destination F?   `6`

What is the new cost of Router B for the destination G?   `infinity`

Your answer is correct.

The correct answer is:

Suppose the cost from Router B to E is 4 ($C_{BE} = 4$). Router E advertises its distance vector to Router B. Find a new distance vector of Router B.
Hints: See Slide 15 and 16 of Lecture 4

What is the new cost of Router B for the destination A? [2]

What is the new cost of Router B for the destination B? [0]

What is the new cost of Router B for the destination C? [5]

What is the new cost of Router B for the destination D? [9]

What is the new cost of Router B for the destination E? [4]

What is the new cost of Router B for the destination F? [6]

What is the new cost of Router B for the destination G? [infinity]

Question 10

Complete

Mark 1.00 out of 1.00

An ARP reply is _____ to _____.

○ a. Unicast; all hosts

○ b. Broadcast; one host

○ c. Broadcast; all hosts

◉ d. Unicast; one host

○ e. Multicast; one host

Your answer is correct.

The correct answer is:
Unicast; one host

Question 11

Complete

Mark 1.00 out of 1.00

The target hardware address on an Ethernet is _____ in an ARP request.

○ a.   Variable

○ b.   Class-dependent

○ c.   0.0.0.0

○ d.   0x00000000

◉ e.   0x000000000000

○ f.   255.255.255.255

Your answer is correct.

The correct answer is:
0x000000000000

Question 12

Complete

Mark 0.00 out of 1.00

All hosts in the networks have been operational for several hours when the DHCP server goes down. What happens to the hosts that have obtained service from the DHCP server?

○ a.   The hosts will be able to communicate with hosts outsides their own network

○ b.   The hosts will only be able to communicate with other hosts by IP address not by hostname

○ c.   The hosts will continue to communicate normally for sometime.

◉ d.   The hosts will not be able to communicate with any other hosts.

Your answer is incorrect.

The correct answer is:
The hosts will continue to communicate normally for sometime.

Question 13
Complete
Mark 1.00 out of 1.00

A router reads the _____ address on a packet to determine the next hop

○ a. IP

○ b. Source

○ c. ARP

○ d. RIP

○ e. MAC

Your answer is correct.

The correct answer is:
IP

Question 14
Complete
Mark 1.00 out of 1.00

_____ is a dynamic mapping protocol in which a physical address is found for a given IP address

○ a. BOOTP

○ b. DHCP

○ c. ICMP

○ d. RARP

◉ e. ARP

Your answer is correct.

The correct answer is:
ARP