Started on	Thursday, 20 January 2022, 10:08 AM
State	Finished
Completed on	Thursday, 20 January 2022, 11:38 AM
Time taken	1 hour 29 mins
Marks	99.00/148.00
Grade	**6.69** out of 10.00 (**67**%)

Question **1**

Incorrect

Mark 0.00 out of 2.00

The time-to-live for a packet(TTL) is expressed in:

Select one or more:

- [ ] a. routers/ second
- [ ] b. the number of routers the packet has already passed through(incremented by 1)
- [ ] c. milliseconds
- [x] d. seconds ✖
- [ ] e. the number of routers the packet is allowed to pass

The correct answer is: the number of routers the packet is allowed to pass

Question **2**

Partially correct

Mark 2.00 out of 3.00

Why would an ISP aggregate smaller networks into a larger one?

- [ ] a. It does not ever aggregate networks.
- [ ] b. It can't store information about each network individually
- [x] c. In order to group all networks for a specific client together ✖
- [x] d. In order to reduce the number of entries in the routing table of the router connecting the ISP to the Internet ✔

The correct answer is:
In order to reduce the number of entries in the routing table of the router connecting the ISP to the Internet

Question **3**

Correct

Mark 2.00 out of 2.00

A TCP header is larger than a UDP header by how many bytes?

Answer: 12 ✔

The correct answer is: 12

Question **4**

Correct

Mark 2.00 out of 2.00

ARP can be used for...

Select one or more:

- [ ] a. Publishing websites to the internet
- [ ] b. Sending emails very fast
- [ ] c. Mapping public virtual addresses to private ip addresses
- [x] d. Mapping network addresses to physical (MAC) addresses ✔

The correct answer is: Mapping network addresses to physical (MAC) addresses

Question **5**

Correct

Mark 1.00 out of 1.00

The network address for 192.120.0.1/16 is 192.120.0.0

Select one:

- (•) True ✔
- ( ) False

The correct answer is 'True'.

Question **6**

Partially correct

Mark 1.00 out of 2.00

Which of the following is a valid IP/Netmask combination?

Select one or more:

- a. 209.220.186.8/255.255.255.240
- b. 209.220.186.8/255.255.255.240
- c. 209.220.186.8/255.255.255.252 ✔
- d. 209.220.186.8/255.255.255.248
- e. None of the combinations are correct

The correct answers are: 209.220.186.8/255.255.255.248, 209.220.186.8/255.255.255.252

Question **7**

Correct

Mark 1.00 out of 1.00

What is the range of all IPs in which the following given IP resides :194.168.19.69/28 ?

Select one or more:

- a. 194.167.19.68 – 194 .167.19.83
- b. 194.168.19.0 - 194.168.19.15
- c. 194.168.19.64 – 194.168.19.87
- d. 194.168.19.64 – 194.168.19.79 ✔

The correct answer is: 194.168.19.64 – 194.168.19.79

Question **8**

Correct

Mark 2.00 out of 2.00

193.231.20.0/24 can be divided in exactly X subnets of equal sizes. X=?

- [x] a. 4 subnets ✔
- [ ] b. 14 subnets
- [x] c. 8 subnets ✔
- [ ] d. 7 subnets
- [ ] e. 5 subnets

The correct answers are:
4 subnets ,

8 subnets

Question **9**

Incorrect

Mark 0.00 out of 4.00

Write the network mask (only as /x.y.z.t) of the minimum sized network that contain both 80.81.82.83 and 80.83.84.85.

Answer: /255.255.255.248 ✖

The correct answer is: 255.252.0.0

Question **10**

Partially correct

Mark 0.50 out of 1.00

Which of the following are valid subnetwork addresses ?

Select one or more:

- [ ] a. 177.91.154.2/30
- [x] b. 177.91.107.144/29 ✔
- [ ] c. 177.91.107.0/30
- [ ] d. 177.91.107.1/25

The correct answers are: 177.91.107.144/29, 177.91.107.0/30

Question **11**

Incorrect

Mark 0.00 out of 5.00

What is the last valid host on the network that 10.215.81.114 / 255.240.0.0 is a part of?

Answer: 10.215.95.254 ✖

The correct answer is: 10.223.255.254

Question **12**

Not answered

Marked out of 5.00

Write as [network address]/[xx] - in the most compact and ordered way - the addressing space 62.255.254.224...63.64.0.31.

(if multiple combinations are needed write them separated by comas without spaces or other characters)

Answer: ✖

The correct answer is: 62.255.254.224/27,62.255.255.0/24,63.0.0.0/10,63.64.0.0/27

Question **13**

Correct

Mark 1.00 out of 1.00

11111111.11111111.11111100.00000000 = 255.255.252.0

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **14**

Correct

Mark 2.00 out of 2.00

In which host range is the IP address 175.156.68.80 255.255.255.192?

- [x] a. 175.156.68.65-126 ✔
- [ ] b. 175.156.68.64-128
- [ ] c. 175.156.68.65-128
- [ ] d. 175.156.68.64-126

The correct answer is:
175.156.68.65-126

Question **15**

Correct

Mark 1.00 out of 1.00

192.168.2.128/25 can be a network address

Select one:

- (•) True ✔
- ( ) False

The correct answer is 'True'.

Question **16**

Correct

Mark 2.00 out of 2.00

Which one of the following addresses is a public IP address assignable to a computer ?

Select one or more:

- [ ] a. 10.5.125.4
- [ ] b. 225.46.130.1
- [x] c. 1.0.0.1 ✔
- [ ] d. 172.16.23.201

The correct answer is: 1.0.0.1

Question **17**

Partially correct

Mark 1.00 out of 2.00

Which of the following IP addresses cannot be broadcast addresses ?

- [x] 200.0.0.33 ✔
- [ ] 10.0.1.254
- [ ] 192.168.0.255
- [ ] 25.0.2.31

The correct answers are:
10.0.1.254,

200.0.0.33

Question **18**

Correct

Mark 3.00 out of 3.00

255.192.0.0 is a valid netmask for the network

Select one or more:

- [x] a. 192.128.0.0 ✔
- [x] b. 132.128.0.0 ✔
- [ ] c. None of the choices
- [ ] d. 192.193.1.0

The correct answers are: 192.128.0.0, 132.128.0.0

Question **19**

Correct

Mark 2.00 out of 2.00

Which of the following is not a characteristic of the IP protocol?

Select one or more:

- [x] a. Is a connection-oriented protocol ✔
- [ ] b. It defines the Internet addressing system
- [ ] c. Is considered an unreliable protocol
- [ ] d. It affects packet routing

The correct answer is: Is a connection-oriented protocol

Question **20**

Correct

Mark 1.00 out of 1.00

The ARP protocol helps with:

Select one or more:

- [ ] a. Determining the IP address when the MAC address is known
- [ ] b. Determining the IP address when the DNS server is known
- [x] c. Determining the MAC address when the IP address is known ✔

The correct answer is: Determining the MAC address when the IP address is known

Question **21**

Correct

Mark 4.00 out of 4.00

A company has three departments: Offices, Public and Managers. The offices have 123 computers, Public Relationship has 29 computers and Managers have 5 computers. The company wants to make a network such that: - every computer has access to internet - have minimum costs - it must be certainly known from which department some webpages are accesed from the HQ in another city Provide a good configuration for these requirements:

Select one:

- a. 1 subnetwork for all the company, 192.168.0.0/24, connect computers to internet through a router which translates every address ip to a public ip address with different class depending on department
- b. 3 subnetworks, 192.168.0.0/25, 192.168.0.128/27, 192.168.0.160/29 and connect them to a central router which translates all the ips on 192.168.0.0/24 with the ip 30.0.0.5
- c. 3 subnetworks, 192.168.0.0/25, 192.168.0.128/27, 192.168.0.160/29, one router which translates first network to 30.0.0.1, second to 30.0.0.2, and third to 30.0.0.3 ✔
- d. 3 subnetworks, 192.168.0.0/24, 192.168.1.0/24, 192.168.2.0/24 for every department and connect every subnet directly to the internet, using NAT, through a different provider

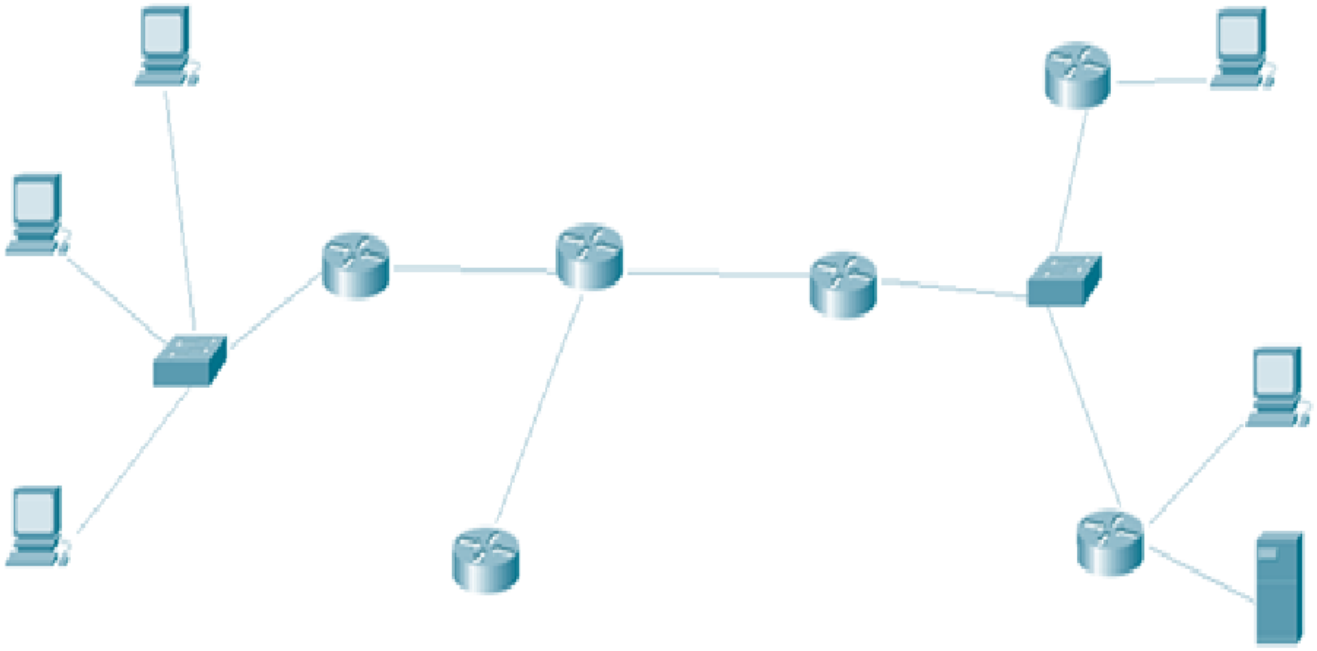
The correct answer is: 3 subnetworks, 192.168.0.0/25, 192.168.0.128/27, 192.168.0.160/29, one router which translates first network to 30.0.0.1, second to 30.0.0.2, and third to 30.0.0.3

Question **22**

Correct

Mark 1.00 out of 1.00

Determine how many subnets are found in the given network



Answer: 7 ✔

The correct answer is: 7

Question **23**

Correct

Mark 1.00 out of 1.00

Which of the following is a private IP address ?

Select one or more:

- [x] a. 192.168.24.43 ✔
- [ ] b. 168.172.19.40
- [ ] c. 172.15.14.36
- [ ] d. 12.0.0.2

The correct answer is: 192.168.24.43

Question **24**

Partially correct

Mark 2.00 out of 3.00

Which of the following addresses can be valid network addresses provided appropriate network masks ?

Select one or more:

- a. 193.231.20.1
- b. 193.231.20.3
- c. 193.231.20.0 ✔
- d. 193.231.20.4 ✔
- e. 193.231.20.2 ✖

The correct answers are: 193.231.20.0, 193.231.20.4

Question **25**

Partially correct

Mark 2.00 out of 3.00

Which of the following cannot be a broadcast address ?

Select one or more:

- a. 22.21.20.19 ✖
- b. 10.20.30.255
- c. 21.20.19.18 ✔
- d. 20.19.18.17 ✔
- e. 192.168.1.255

The correct answers are: 21.20.19.18, 20.19.18.17

Question **26**

Correct

Mark 1.00 out of 1.00

accept() is not required in any TCP client

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **27**

Correct

Mark 2.00 out of 2.00

Which IP field helps to check the order of the fragments?

- a. flag
- b. TTL
- c. identifier
- d. offset ✔

The correct answer is:
offset

Question **28**

Correct

Mark 3.00 out of 3.00

In TCP, bytes not read from the stream:

Select one or more:

- a. Stay available for next read ✔
- b. A stream does not has bytes into his composition
- c. Are lost
- d. are lost - but their count is reported as an error to the user

The correct answer is: Stay available for next read

Question **29**

Incorrect

Mark 0.00 out of 1.00

The listen() call is mandatory in any TCP server

Select one:

- True
- False ✖

The correct answer is 'True'.

Question **30**

Correct

Mark 2.00 out of 2.00

How many bits of 0 are in the following netmask? 255.255.255.254 ?

Answer: 1 ✔

The correct answer is: 1

Question **31**

Correct

Mark 1.00 out of 1.00

Consider the following netmask: 255.255.0.0, the network part(network length) is formed by a number of bits equal to

Select one or more:

- a. 16 ✔
- b. Impossible to determine
- c. 8
- d. 24

The correct answer is: 16

Question **32**

Correct

Mark 2.00 out of 2.00

What is the broadcast address of the network 190.60.16.0/28?

- a. 190.60.16.31
- b. 190.60.16.7
- c. 190.60.16.15 ✔
- d. 190.60.16.255

The correct answer is:
190.60.16.15

Question **33**

Correct

Mark 1.00 out of 1.00

A DNS server cannot be a Default Gateway

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **34**

Partially correct

Mark 1.50 out of 3.00

The cheksum in the IP header is computed:

- a. when passing through each switch and hub in order to ensure consistency
- b. on the source and destionation hosts ✔
- c. on each router
- d. everytime a router believes the packet has been altered

The correct answers are:
on each router ,

on the source and destionation hosts

Question **35**

Correct

Mark 2.00 out of 2.00

Which is the closest number to the largest routing table in the case of class full IP Addressing?

- [ ] a. 2^32
- [x] b. 2^7+2^14+2^21 ✔
- [ ] c. 2^8+2^16
- [ ] d. 2^16

The correct answer is:
2^7+2^14+2^21

Question **36**

Correct

Mark 3.00 out of 3.00

What is the broadcast address for subnet 200.35.1.192/27?

Answer: 200.35.1.223 ✔

The correct answer is: 200.35.1.223

Question **37**

Correct

Mark 2.00 out of 2.00

What does a mask /29 mean?

- [ ] The maximum number of IP addresses that can be assigned to hosts is 29
- [ ] The maximum number of IP addresses that can be assigned to hosts is 8
- [x] The maximum number of IP addresses that can be assigned to hosts is 6 ✔
- [x] Is equivalent to 255.255.255.248 ✔

The correct answers are:
The maximum number of IP addresses that can be assigned to hosts is 6,

Is equivalent to 255.255.255.248

Question **38**

Correct

Mark 2.00 out of 2.00

Which is the correct expression for the length of UDP datagram payload ?

- [ ] a. UDP length = UDP length – UDP header's length
- [x] b. UDP length = IP length – IP header's length -UDP header length ✔
- [ ] c. UDP length = UDP length + UDP header's length
- [ ] d. UDP length = IP length + IP header's length

The correct answer is:
UDP length = IP length – IP header's length -UDP header length

Question **39**

Correct

Mark 2.00 out of 2.00

Which of the following can be a mask, such that 62.244.89.16 is a valid network address?

- [x] a. /29 ✔
- [x] b. 255.255.255.252 ✔
- [x] c. 255.255.255.248 ✔
- [ ] d. 255.255.255.128
- [ ] e. /27

The correct answers are:
/29,

255.255.255.252,

255.255.255.248

Question **40**

Correct

Mark 1.00 out of 1.00

The recvfrom() call doesn't transmit data to the UDP server

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **41**

Correct

Mark 4.00 out of 4.00

What is the netmask of the minimum sized network that has as broadcast 70.71.79.255 and also contains the host IP address 70.71.79.240 ?

Answer: /27 ✔

The correct answer is: 255.255.255.224

Question **42**

Correct

Mark 2.00 out of 2.00

Which of the following are not contained in a routing table?

- a. the network interface
- b. gateway
- c. source address ✔
- d. the netmask

The correct answer is:
source address

Question **43**

Correct

Mark 2.00 out of 2.00

What is true about ICMP packets ?

Select one or more:

- [x] a. They are encapsulated within IP datagrams. ✔
- [ ] b. They do not provide hosts with information about network problems.
- [ ] c. They guarantee datagram delivery.
- [ ] d. ICMP is encapsulated within UDP datagrams.

The correct answer is: They are encapsulated within IP datagrams.

Question **44**

Correct

Mark 2.00 out of 2.00

Broadcasting is

Select one or more:

- [ ] a. A mechanism which is used when the transmission of a packet fails
- [ ] b. When a transmitted packet is received by every machine on the network but processed by only one of them
- [ ] c. When a transmitted packet is received by every machine on the network but processed by none of them
- [x] d. When a transmitted packet is received and processed by every machine on the network ✔

The correct answer is: When a transmitted packet is received and processed by every machine on the network

Question **45**

Incorrect

Mark 0.00 out of 2.00

Consider the following network address: 192.0.2.64 . How many net masks can it be used with?

Answer: 7 ✖

The correct answer is: 5

Question **46**

Incorrect

Mark 0.00 out of 2.00

When the Congestion Window is below the Threshold:

- [x] a. The window grows linearly ✖
- [ ] b. The window is set to 1 MSS
- [ ] c. The congestion window grows exponentially

The correct answer is:
The congestion window grows exponentially

Question **47**

Incorrect

Mark 0.00 out of 2.00

What happends if the Gateway in a Routing table entry is 0.0.0.0?

- [ ] a. This is not possible
- [ ] b. The router puts the packet on the associated network interface with this route
- [x] c. All packets will be directed to 0.0.0.0 ✖
- [ ] d. The router drops the packet as there is no such gateway ip address

The correct answer is:
The router puts the packet on the associated network interface with this route

Question **48**

Incorrect

Mark 0.00 out of 1.00

What is the netmask of the largest network with the address 84.176.0.0 ? (as x.y.z.t)

Answer: /16 ✖

The correct answer is: 255.240.0.0

Question **49**

Correct

Mark 1.00 out of 1.00

Not all IP addressses from the class 192.168.0.0/16 are private

Select one:

- True
- False ✔

The correct answer is 'False'.

Question **50**

Partially correct

Mark 1.00 out of 3.00

Consider one SWITCH and 10 PC's connected to it. Which of the following is false?

Select one or more:

- a. when PC1 sends a message to PC5, the message will be received by all the PC's but only PC5 process it; the answer will be also received by all the PC's but only PC1 will process it ✔
- b. when PC1 sends a message to PC5, the message will be received by all the PC's, but only PC5 process it; the answer is sent back and received only by PC1
- c. when PC1 sends a message to PC5, the message will be received by all the PC's, each of them sending back an answer
- d. when PC1 sends a message to PC5, the message will be received and processed just by PC5 and the answer of PC5 will be received and processed just by PC1

The correct answers are: when PC1 sends a message to PC5, the message will be received by all the PC's but only PC5 process it; the answer will be also received by all the PC's but only PC1 will process it, when PC1 sends a message to PC5, the message will be received by all the PC's, each of them sending back an answer, when PC1 sends a message to PC5, the message will be received by all the PC's, but only PC5 process it; the answer is sent back and received only by PC1

Question **51**

Incorrect

Mark 0.00 out of 2.00

A TCP connection is terminated through:

- [ ] a 4-way handshake
- [ ] none of the answers are correct
- [x] a 2-way handshake ✖
- [ ] a 3-way handshake

The correct answers are:
a 4-way handshake,

a 3-way handshake

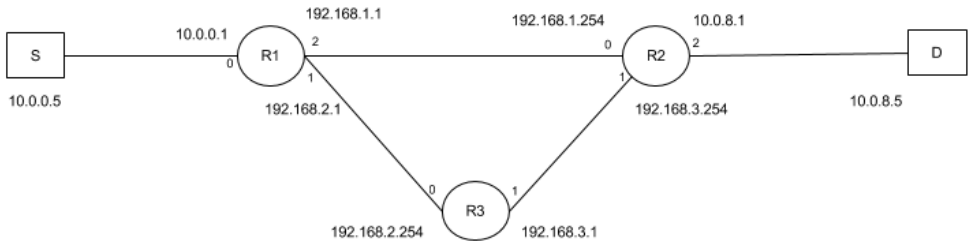
Question **52**

Incorrect

Mark 0.00 out of 3.00

Given the network diagram bellow and the routing tables for routers R1, R2, R3 - provide the first 4 IP addresses displayed by executing on host **S -** ***traceroute 10.0.8.5*** !

(addresses will be written separated only by comas with **no spaces** or other characters)



R1 Dest	Mask	Gateway	Intf
10.0.0.0	/24	0.0.0.0	0
192.168.2.0	/24	0.0.0.0	1
192.168.1.0	/24	0.0.0.0	2
0.0.0.0	/0	192.168.2.254	1

R2 Dest	Mask	Gateway	Intf
192.168.1.0	/24	0.0.0.0	0
192.168.3.0	/24	0.0.0.0	1
10.0.4.0	/22	0.0.0.0	2
0.0.0.0	/0	192.168.1.1	0

R3 Dest	Mask	Gateway	Intf
192.168.3.0	/24	0.0.0.0	1
192.168.2.0	/24	0.0.0.0	0
0.0.0.0	/0	192.168.3.254	1

Answer: 192.168.2.1,192.168.2.254,192.168.3.1,192.168.3.254 ✖

The correct answer is: 10.0.0.1,192.168.3.1,192.168.1.254,10.0.0.1

Question **53**

Correct

Mark 1.00 out of 1.00

Which of the following IP sets belong to 209.220.186.12/255.255.255.252 ip class?

Select one:

- a. 209.220.186.12, 209.220.186.13, 209.220.186.14, 209.220.186.15 ✔
- b. 209.220.186.13, 209.220.186.14, 209.220.186.15, 209.220.186.16
- c. 209.220.186.10, 209.220.186.11, 209.220.186.12, 209.220.186.13, 209.220.186.14, 209.220.186.15, 209.220.186.16, 209.220.186.17
- d. 209.220.186.12, 209.220.186.13, 209.220.186.14, 209.220.186.15, 209.220.186.16, 209.220.186.17, 209.220.186.14, 209.220.186.18

The correct answer is: 209.220.186.12, 209.220.186.13, 209.220.186.14, 209.220.186.15

Question **54**

Correct

Mark 2.00 out of 2.00

What will you get if you 'or' together the netmask of a network and one IP in that network?

Select one or more:

- a. The class of the ip.
- b. The first IP address in the class of the given IP
- c. Nothing significant ✔
- d. The last IP in the class of the given IP

The correct answer is: Nothing significant

Question **55**

Correct

Mark 2.00 out of 2.00

What are the values of the network address and the netmask in the default route?

- [ ] a. 255.255.255.255 0.0.0.0
- [ ] b. 0.0.0.0 255.255.255.0
- [x] c. 0.0.0.0 0.0.0.0 ✔
- [ ] d. 127.0.0.1 255.255.255.0

The correct answer is:
0.0.0.0 0.0.0.0

Question **56**

Incorrect

Mark 0.00 out of 2.00

The following code is a:

```
listen(s, 5);
while (1) {
  memset(&client, 0, sizeof(client));
  l = sizeof(client);
  c = accept(s, (struct sockaddr *) &client, &l);
  if (fork() == 0) {
    worker();
  }
  wait(0);
}
```

- [ ] a. concurrent multiplexed server
- [ ] b. iterative server
- [x] c. concurrent server ✖
- [ ] d. peer to peer server

The correct answer is:
iterative server

Question **57**

Correct

Mark 1.00 out of 1.00

The size of a class of IP addresses has to be a power of 2

Select one:

- True ✔
- False

The correct answer is 'True'.

Question **58**

Incorrect

Mark 0.00 out of 3.00

Which of the following is the correct host range for the subnet in which we can find the IP address 192.168.168.188/255.255.255.192 ?

Select one or more:

- a. 192.168.168.129-191 ✖
- b. 192.168.168.128-190
- c. 192.168.168.128-192
- d. 192.168.168.129-190

The correct answer is: 192.168.168.129-190

Question **59**

Incorrect

Mark 0.00 out of 3.00

Which of the following address can be a valid host IP that can be allocated to a host:

Select one or more:

- a. 18.19.20.255
- b. 223.245.256.17 ✖
- c. 193.231.21.0

The correct answers are: 193.231.21.0, 18.19.20.255

Question **60**

Correct

Mark 2.00 out of 2.00

Two connected routers are configured with RIP routing. What will be the result when a router received a routing update that contains a higher-cost path to a network already in its routing table?

- a. the updated information will replace the existing routing table entry
- b. the update will be ignored and no further action will occur ✔
- c. the existing routing table entry will be deleted from the routing table and all routers will exchange routing updates to reach convergence
- d. the updated information will be added to the existing routing table

The correct answer is:
the update will be ignored and no further action will occur

Question **61**

Correct

Mark 2.00 out of 2.00

What netmask is needed to split a network with address 133.25.0.0/16 in 1000 subnets of 14 hosts each?

- a. /19
- b. /28 ✔
- c. /15
- d. /21

The correct answer is:
/28

Question **62**

Correct

Mark 4.00 out of 4.00

What is the broadcast address for IP combination 132.45.99.0/19?

Answer: 132.45.127.255 ✔

The correct answer is: 132.45.127.255

Question **63**

Correct

Mark 3.00 out of 3.00

Given the address 137.25.28.0/255.255.254.0 provide the maximum number of valid subnets that can be obtained from splitting this network

Answer: 128 ✔

The correct answer is: 128

Question **64**

Incorrect

Mark 0.00 out of 3.00

What is the network address and mask of the smallest subnet that fits these two IP addresses: 180.181.182.183 and 180.186.12.180? (addr/x.y.z.t format)

Answer: 180.176.0.0/255.248.0.0 ✖

The correct answer is: 180.176.0.0/255.240.0.0

Question **65**

Correct

Mark 2.00 out of 2.00

You have an interface on a router with the IP address of 192.168.192.10/29. Including the router interface, how many hosts can have IP addresses on the LAN attached to the router interface?

Select one or more:

- [ ] a. 7
- [ ] b. 8
- [x] c. 6 ✔
- [ ] d. 5

The correct answer is: 6

Question **66**

Correct

Mark 2.00 out of 2.00

What happens after receiving one duplicate Acknowledgment?

- [ ] a. Congestion Window is cut in half
- [ ] b. Congestion Window is set to 1 MSS
- [ ] c. Congestion Window is cut in half and grows exponentially
- [x] d. none of the answers are correct ✔

The correct answer is:
none of the answers are correct

Question **67**

Correct

Mark 3.00 out of 3.00

How many /27 networks are needed such that they can be supernetted to a /24 network?

Answer: 8 ✔

The correct answer is: 8

Question **68**

Correct

Mark 2.00 out of 2.00

Which of the following is true about the IP address 10.16.3.65/23?

Select one or more:

- [x] a. The lowest host address in the subnet is 10.16.2.1 ✔
- [ ] b. The subnet address is 10.16.3.0/255.255.254.0
- [ ] c. The last valid host address in the subnet is 10.16.2.254
- [ ] d. The broadcast address of the subnet is 10.16.3.254

The correct answer is: The lowest host address in the subnet is 10.16.2.1

Question **69**

Correct

Mark 1.00 out of 1.00

How many bits of zero does the following netmask have? 255.255.255.248

Select one:

- a. 3 bits ✔
- b. 4 bits
- c. 8 bits
- d. 2 bits

The correct answer is: 3 bits