**The Network Layer**

**LATEST SUBMISSION GRADE**

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1.Question 1

**An ARP broadcast is sent to the special MAC address \_\_\_\_\_\_\_\_.**

FF:FF:FF:FF:FF:FF00:00:00:00:00:00255.255.255.255192.168.0.1

Ans :1

**Correct**

You got it! ARP broadcasts are used to ask all devices on a local area network if they're associated with a specific IP address.

2.Question 2

**A subnet ID is calculated via a \_\_\_\_\_\_\_\_.**

subnet maskdemarcation pointrouterrouting protocol

**Ans:1**

**Correct**

Wohoo! A subnet mask is also a way to determine the size of a subnet.

3.Question 3

**RFC stands for \_\_\_\_\_\_.**

Routing Frequency ControlRequest For CommentsRealtime Frame CheckRedundant Frame Controller

Ans:2

**Correct**

That's right! RFCs have long been used to help establish agreed-upon standards and protocols.

4.Question 4

**Ranges of IP addresses that anyone can use for their internal networks are known as \_\_\_\_\_\_.**

Subnet MasksDemarcation PointsAutonomous SystemsNonroutable Address Space

Ans:4

**Correct**

Awesome! Non-routable address space can be used by anyone.

5.Question 5

**n binary, 1 +1 = \_\_\_\_\_.**

21010

Ans:2

**Correct**

Awesome! Binary addition is just like decimal addition, except you only have two numerals instead of ten.

6.Question 6

**Calculate how many decimal numbers a 4-bit number can represent.**

1642568

**Correct**

Right on! A bit is base two. The calculation of a 4-bit number is 2^4 = 16.

7.Question 7

**What information will you find in the 16-bit field in an IP datagram?**

The Internet Protocol versionThe total length of the datagram it's attached toThe quality of service technologiesThe header length field

**Incorrect**

Not quite. Please review the videos in the "Network Layer" module for a refresher.

8.Question 8

**On a Local Area Network, or LAN, what identification do nodes use to communicate with each other internally?**

EIN serialStatic IP addressPhysical MAC addresses.Dynamic IP address

**Ans : 3**

**Correct**

Well done! On a Local Area Network, or LAN, nodes can communicate with each other through their physical MAC addresses. This works well on a small scale.

9.Question 9

**When dealing with IPv4, what is the minimum IP header length?**

8 bits4 kilobytes64 bytes20 bytes

Ans:4

**Correct**

Right on! An IP header is almost always 20 bytes in length when dealing with IPv4. 20 bytes is the minimum length of an IP header.

10.Question 10

**Which IP address is Class C?**

224.24.45.69192.37.48.98128.42.39.72132.26.144.52

Ans:2

**Correct**

Well done! Class C addresses begin with a first octet value of 192 through 223.

11.Question 11

**What protocol is used to discover the hardware address of a node with a certain IP address?**CIDR, or Classless Inter-Domain RoutingSQL databaseARP tableSubnet mask

Ans:3

**Correct**

You got it! An ARP table is just a list of IP addresses and the MAC addresses associated with them.

12.Question 12

**What is the process of taking a large network and splitting it up into many individual and smaller subnetworks called?**

Dynamic Host Configuration Protocol (DHCP)SubnettingClusteringCloud computing

Ans:2

**Correct**

Nice job! Subnetting is the process of taking a large network and splitting it up into many individual and smaller subnetworks, or subnets.

13.Question 13

**What is the maximum decimal number possible to represent with 16 bits?**

16256655361600

Ans:3

**Correct**

Woohoo! If you have a 16-bit number, you can just perform the math 2^16 which would be 65536 numbers.

14.Question 14

**Computer A wants to send some data to computer B. Computer A knows that Computer B is not on its local network, so it sends the packet to the router between Network A and Network B. Based on how many network hops have happened, how much will the TTL field be decremented by?**2618

**Incorrect**

Not quite. Please review the videos in the "Basic Routing Concepts" module for a refresher.

15.Question 15

**How many bits long is a Autonomous System Number (ASN)?**

832644

**Correct**

Nice job! ASNs are numbers assigned to individual autonomous systems. Just like IP addresses, ASNs are 32-bit numbers. But, unlike IP addresses, they’re normally referred to as just a single decimal number instead of being split out into readable bits.