Reimaging the Internet Assignment

1. Vint Cerf has described the Internet as a homogenous network that connects heterogeneous computers. What did he mean by that?

He means that the network has the same protocols but connects to different devices.

2. What is Metcalfe's law? (Hint: Use Google.)

Metcalfe's Law states that the value of a network increases by the square of the size of the network.

3. Where geographically are the majority of Internet Users located?

Asia

4. Concerning the percentage of a country's population that uses the Internet, with what are mobiles helping?

Mobiles are helping by providing a more economic means of accessing the internet.

5. In design terms, what differentiates the Internet from earlier networks such as the Telephone and Telegraph networks?

The Internet does not have the limitations earlier networks had because the other networks were purpose designed, whereas the Internet was not. This caused the Internet to have much greater flexibility.

6. Was there a particular logic in Vint Cerf's choice of a 32 it address space for IP addresses?

Vint Cerf chose the 32 bit address because he thought he was doing an experiment and that 32 bit would be enough. He thought that at the conclusion of the experiment they would go back and do a production engineering job.

7. How do digital signatures relate to closing an important vulnerability in the DNS system?

One of the problems with the DNS system is that the cashe can be poisoned, digital signatures can help alleviate this problem by binding the domain name and IP address.

8. What is a sensor network? Give an example.

A sensor network is just as it sounds, a network of connected devices that monitor things in the real world. An example he used is the Smart Grid which is a power monitoring program.

9. What does Vint serve describe as one of the hardest problems that he can imagine?

Figuring out that configuration is wrong.

10. Why is cloud collaboration important?

We are committed to data liberation, letting people get data out of the cloud. Cloud collaboration would allow people to freely move and access data from one cloud to another.

11. How does Vint Cerf describe the job that his Internet Design did with mobile? Specifically, what was the problem?

Vint Cerf failed to take into account that a device might move physically from one location to another. In other words you have nodes whose IP addresses have to change depending on where they accessed the network.

12. How does Vint Cerf describe the job that his Internet Design did with broadcast? Specifically, what was the problem?

The problem is that they have made it a point to point links. A solution he put forth was a satellite system that could transmit down on 100 million receivers at the same time.

13. What is strong authentication? Why is the lack of this an issue?

-Verified ID

- No true authentication

14. In an Internet context, what is the overrun problem?

Taking advantage of tour asset to defeat you

15. What does Cerf cite as a problem with the Internet and copyright?

How it will be interpreted in the future.

16. What does Cerf mean when he talks about rotten bits? Give an example.

When he talks about rotten bits he refers to future application compatibility. The example he fives is Windows Office 2009 and 2013

17. Briefly describe the InterPlanetary Internet. In your description, describe how this solves the point to point InterPlanetary communications problem.

InterPlanetary internet is the ability to transmit data from a planet back to earth, using a reply satellite would allow data to be stored and forwarded.

18. In an Internet context, what is common carriage? What implications does this have for Internet billing?

Common carriage means the same rules apply to everyone and all customers are served under the same terms and conditions.

19. What does Cerf means when he says that in the future, the network will disappear?

He is trying to say that in the future everything will be network capable.

Internet Resources

1. What is the Internet Society?

It is a professional society founded in 1992 dedicated to helping the Internet expand and grow across the world. It also provides technical support and guidance to organizations that use the internet.

2. Who is Vint Cerf?

Vint Cerf was a graduate student who worked on establishing the first multi-node network known as the ARPANET. He also worked with Bob Kahn on the development of the TCP/IP protocol. He was also responsible for driving the development of MCI mail the first large commercial application to use the Internet while a vice president at MCI. He was responsible for lobbying to use the non-commercial Internet to transport MCI mail messages between users. Other commercial email providers soon followed suit and because of the openness of the TCP/IP protocol users of different email providers were soon exchanging emails across different email platforms.

3. Who is Bob Kahn?

He was the lead developer of Transmission Control Protocol which allowed data to be reliably passed between different end points via packet switching technology. It featured negotiated connections between 2 machines and then performed error checking to insure the complete packets were delivered in the correct order

4. As articulated by Lynn St. Amour, what is ISOC's hope for the future?

That everyone in the world will have equal access to a ubiquitous, reliable and open Internet and all countries of the world will be on par with each other.