Problem 9

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1. Each network technology is designed to fit a specific set of constraints.

LAN technologies are designed to provide high-speed communication across short distances.

WAN technologies are designed to provide communication across large areas.

2. Most modern computer communication systems allow communication between any two computers analogous to the way a telephone system provides communication between any two telephones, known as universal service.

Although this service is highly desirable, incompatibilities among network hardware, frames, and address prevent a bridged network from including arbitrary technologies.

3. The basic component used to connect heterogeneous networks is a router which is an independent hardware system dedicated to the task of interconnecting networks and contains

a processor and memory as well as a separate I/O interface for each network to which it connects.

4. The TCP/IP Internet Protocol suite is is the most widely used internet Protocol.

5. Host computer to refers to a computer that connects to the Internet and runs applications.

6.IP defines a set of special address forms that are reserved

7.List the protocols on network layer: ICMP、IP、RARP、ARP .

8.IP addressing is independent of hardware addressing. It is a uniform addressing in Internet

Used by Higher-layer protocols、Applications、Users ,also called protocol address.

9. An IP address does not identify a specific computer.Instead, each IP address identifies a ***connection*** *between a computer and a network.*  .

10. IP address is divided into two parts: A prefix ： network ID， A suffix ： host ID

11. Internet Corporation for Assigned Names and Numbers (ICANN) authority is to handle address assignment and adjudicate disputes. ICANN does not assign individual prefixes,Instead, ICANN authorizes a set of registrars named ISPs to do so.

12.Four IP Addressing Methods are: Classful IP Addressing、Subnet Addressing、Classless Addressing、NAT.

* 13. The Class A IP address is used for organizations with a large number of users connected to the Internet and a small number of networks.
* A Class B address is used for medium-sized networks having more than 255 hosts ..
* A Class C address is used for networks with a small number of hosts (those networks whose number of hosts does not exceed 255).

14.Multi-homing is sometimes used to increase reliability and performance .

* Like a router, a multi-homed host has multiple protocol addresses, one for each network connection.