Practice Questions for Exam 1
(Internet Basics)

Question 1-Internet:

The original Internet-protocol design philosophy consisted of an ordered set of eight goals. What are these eight goals? Identify one that has not yet been fully met.

Question 2-internet:

When a new machine is attached to a network, it must be told the IP addresses of three machines if it is to be able to communicate with the rest of the Internet. Identify these three machines whose IP addresses are needed, and briefly explain the way in which the host uses each of these three IP addresses.

Question 3-Internet:

For one i, $1 \leq i \leq 4$, item i in the Telephone Network list should be item i in the Internet list. What is i?

Telephone Network

1. Connection-based

2. Best Effort

3. Intelligence is "in the network"

4. Traffic is carried by relatively few, "well known" communications companies.

Internet

1. Packet-based

2. Admission Control

3. Intelligence is "at the endpoints"

4. Traffic is carried by many routers, operated by a changing set of parties that are known only locally.

Question 4-Internet:

a) What are the four primary layers in the Internet architecture?
b) How do the network-architectural principal of layering and the existence of open protocol standards foster a dynamic and fertile environment for innovation in electronic commerce and other Internet-based interaction?

Question 5-Internet:

What is the *end-to-end principle* of network design? Do you think that the end-to-end design of Internet protocols works for or against the privacy and security of Internet users? Briefly justify your answer.