question preview

Mata Kuliah	**: Computer Network**
Dosen	**: Rabihi Awaludin**
Program Studi	**: Ilmu Komputer**
Semester	**:**
Hari/Tanggal	**: Sabtu, 20 Agustus 2016**
Waktu	**: 90 menit**
Sifat	**: Close Book**

SOAL URAIAN

1. The Internet is roughly doubling in size every 18 months. Although no one really knows for sure, one estimate put the number of hosts on it at 600 million in 2009. Use these data to compute the expected number of Internet hosts in the year 2018. Do you believe this? Explain why or why not.

2. When a system has a permanent part and a removable part (such as a CD-ROM drive and the CD-ROM), it is important that the system be standardized, so that different companies can make both the permanent and removable parts and everything still works together. Give three examples outside the computer industry where such international standards exist. Now give three areas outside the computer industry where they do not exist

3. Imagine that you have trained your St. Bernard, Bernie, to carry a box of three 8-mm tapes instead of a flask of brandy. (When your disk fills up, you consider that an emergency.) These tapes each contain 7 gigabytes. The dog can travel to your side, wherever you may be, at 18 km/hour. For what range of distances does Bernie have a higher data rate than a transmission line whose data rate (excluding overhead) is 150 Mbps? How does your answer change if (i) Bernie?s speed is doubled; (ii) each tape capacity is doubled; (iii) the data rate of the transmission line is doubled.

4. Search the Internet to find out some of the important peering points used for routing packets in the Internet at present.

5. Besides bandwidth and latency, what other parameter is needed to give a good characterization of the quality of service offered by a network used for (i) digitized voice traffic? (ii) video traffic? (iii) financial transaction traffic?

SELAMAT MENGERJAKAN

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1. What is the main difference between TCP and UDP?

2. The ping program allows you to send a test packet to a given location and see how long it takes to get there and back. Try using ping to see how long it takes to get from your location to several known locations. From these data, plot the one-way transit time over the Internet as a function of distance. It is best to use universities since the location of their servers is known very accurately. For example, berkeley.eduis in Berkeley, California;mit.eduis in Cambridge, Massachusetts; vu.nlis in Amsterdam; The Netherlands;www.usyd.edu.auis in Sydney, Australia; and www.uct.ac.zais in Cape Town, South Africa.

3. Go to IETF?s Web site,www.ietf.org, to see what they are doing. Pick a project you like and write a half-page report on the problem and the proposed solution.

4. Imagine that you have trained your St. Bernard, Bernie, to carry a box of three 8-mm tapes instead of a flask of brandy. (When your disk fills up, you consider that an emergency.) These tapes each contain 7 gigabytes. The dog can travel to your side, wherever you may be, at 18 km/hour. For what range of distances does Bernie have a higher data rate than a transmission line whose data rate (excluding overhead) is 150 Mbps? How does your answer change if (i) Bernie?s speed is doubled; (ii) each tape capacity is doubled; (iii) the data rate of the transmission line is doubled.

5. A system has an n-layer protocol hierarchy. Applications generate messages of length Mbytes. At each of the layers, an h-byte header is added. What fraction of the network bandwidth is filled with headers?

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