Chp 1

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Fiber optics – why you’d use one over the other and some characteristics

History – read the textbook for this, history of the web\*, really know who created it and when it was created

Understand the four types of delays and the magnitude of each one of them, get a sense of what the differences are between them

Chp 2,3

Thorough understanding of the tcp and udp communication, why use one over the other

Make sure what message boundaries are (textbook)

Dns servers; make sure you know the different types and where to be used, know the hierarchy of the dns servers

Records and smtp; know the differences and know when to use them

Number of sockets for tcp (welcoming sockets) know what it is and where to use them

Rdt protocols; how they work and why we added different elements and what trip them up

Internet checksum; know how to do (1’s complement)

Chp 4 (this was not on midterm)

Network address translation (NAT); really understand this, know what its for, nat traversal problem; what we’re referring to\*\*\*

Packet fragmentation; make sure you understand the process and how it relates to mtu, where it occurs and where the packets are dealt with

Routing algorithm; don’t worry about the routing protocols/diagrams, just be wary of them. Really understand the routing in general, how it works and how the ip address can be traced down the network

Know how many segments it’ll take to transmit a byte of data using tcp

Subnets and subnet masks; be aware of subnet masks, if given a subnet with a mask, you should be able to give back a range of ip’s

Version 4,6; understand the differences and the features, some of the solutions to dealing with the upcoming problems

Routers; need to know in detail about switching fabrics

IP datagrams; know the headers in ip datagram, understand the different fields in there, no need to know the number of bytes per header

Chp 5

Multiple access protocols; really know them

Ethernet; how it works

ARP/DHCP; understand these protocols and how they work at the network level; what does an ARP request look like when sent out, what does a DHCP look like when plugged into a computer

MAC addresses and ip addresses; where its going to send datagrams to, examples are in book and slides

V lans? and trump ports; know how they work

Ethernet protocol; really understand it, will be on exam

CRC; how to calculate a CRC checksum

Odd parity schemes;

Understand what happens when we have those broadcast addresses and packet floods; know the differences

Chp 8 (can work off of the slides)

Go by the slides, and read the subsections the slides relate to, going to be on a more general level of concept

Public key crypto, how when and where we would use it

VPNs and firewalls; understand the purpose of them, understand the basics of why we use a VPN and what its for. Same goes for firewalls, why we use a high level concept of it.

General Concepts to know (areas of focus)

Encapsulation; understand this concept, the different layers and layer number

Different types of isp’s;

Hierarchy of how the internet service providers work

Traceroutes

Difference between mac and ip addresses; they are obviously on different layers but know the features (layers 1-5)

Slightly more weighted towards tcp udp and arp protocols

Routing algorithms; distance vector, linked state routing, digakstra

Office hours this Friday