COE 444 - Internetwork Design and Management
Fall 2005 (Term 051)

Homework 5

Date: Sunday, November 20, 2005

Q1.

a. If full meshing is required among n nodes, then how many circuits are needed?

b. A collection of five X.25 Packet switch exchanges (PSEs) are to be connected. Between every two PSEs the designer may assign a 64 Kbps line or no line. If it takes 100 ms to generate and evaluate each topology, how much time would be required to inspect all of them and select the one that best matches the expected load and delay requirements?

Q2. Answer the following review questions from the "Cisco Internetwork Design" handout:

- Chapter 2 (1→ 7)
- Chapter 3 (1, 2, 3, 6)
- Chapter 4 (4)
- Chapter 5 (1→ 4, 6)

Q3. A good enterprise network should follow a structured hierarchical design model consisting of three tiers (i.e., layers). Name these 3 tiers, and state the main design rule for each one.

Q4. Hierarchical design guidelines state that chains and backdoors must be avoided. Draw an example of each type.

Q5. Name and briefly describe the two general methods of implementing campus backbones.

Q6. State the definition of multihoming, and draw two options for multihoming the Internet connection using one Internet Service Provider (ISP).

Q7. State the definition of a demilitarized zone (DMZ) network, and draw pictures of two DMZ topologies.

Q8. Draw the Structured Cabling System (SCS) topology including the names of the 3 distribution points and the 3 cabling areas/subsystems.

Q9. Describe the role of a distribution point

Q10. List the main media options used, the maximum distance used, and the maximum patch cord distances allowed in each cabling area/subsystem. Why there is a limitation in these distances?