Know the purpose of the various commands used in the two switch labs and those used in the router lab through section six. You are not responsible for command syntax, but you will be expected to identify the purpose/function of a given statement.

Be able to explain the steps taken to accomplish the tasks identified in the labs.

- How do you create a serial connection to a switch or router?
- How do you initialize a switch?
- How do you get help on a switch or router?
- What is needed to create a vlan?
- What is needed to configure a vlan for management?
- How do you manage a switch via a telnet connection?

Chapter 8

What is the difference between the console password, vty password, enable password and enable secret.

Review LAN Switch Configuration and Operation, pages 188 - 193

Chapter 9

What is a vlan?
How can vlans be connected when multiple switches are used?
What is trunking? Know both trunking protocols and which one is now preferred.
How can data be transferred between vlans? (Use of a router)
What is a layer three switch?
What is the effect of the administrative mode options for switchport mode (Table 9-1)

Chapter 11

Define subnet. Differentiate between lans and subnets.
Describe the relationship between subnets and routers.
What factors should be considered in determining the number of subnets (p. 274 -275)
What are variable length subnet masks?
How are IP address limitations being addressed? (p. 280)
What are the private IP address spaces?
Know classful addressing - Identifying the class; Number of octets for network and hosts by class
Be able to apply the slash notation.
Be able to create a subnet mask for a particular class with a number of subnets or a number of hosts per subnet

Chapter 12

Know the class address ranges
For a given IP address, identify the class, the network ID, the multicast address and the lowest and highest addresses

Chapter 13

What does a subnet mask communicate?
How is a subnet mask formatted?
For a given address and mask, determine the structure of the subnets - number of subnets, number of hosts per subnet
For a given scenario, define the applicable subnet mask

**Chapter 14**

Be able to convert between binary and decimal for values 0 to 255
Be able to convert an IP address or subnet mask between binary and decimal dotted notation

**Chapter 15**

Describe the modular nature of routers. What kinds of modules are available? (See p357 -258)
What is the function of different ports on a router? (Console, Aux, USB, G0/0, G0/1, F0/0, F0/1)

**Chapter 17**

What is the difference between a routing and a routed protocol? Basically, how does each work?
Differentiate between interior and exterior gateway protocols?
Describe the metrics used by IGPs?
What protocols are used for IGPs and what metrics do they use?
What protocol is used on the Internet? What metric does it use?

**Chapter 24**

Define CIDR
Define Network Address Translation
Define static and dynamic NAT
Define Port Address Translation. What is overloading? How does PAT support Overloading?

**Security Issues**

Define malware, virus, worm, Trojan, macro virus, adware, spyware, phishing, exploit, backdoor
Describe a denial of service attack and a distributed denial of service attack
Describe security planning principles and the issues discussed in class
Sources of threats - What are the general sources of threat to an infrastructure?
Options for addressing threats - Define the six general options for addressing threats.
Assessing threats - How are threats assessed? What factors are used in allocating resources to addressing threats?
Describe a “strong” password
Define authentication and confidentiality. How are symmetric and asymmetric keys used for these? Why?
Define / describe public key, private key and digital certificate
Describe biometric authentication options

**Other**

There will be a subnet mask problem, a routing problem and a network design problem which includes lan, wlan and wan.