FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY
DEPARTMENT OF INFORMATION AND MEDIA TECHNOLOGY
CIT 322 EXAMINATION

Course Code: CIT 322   Course Title: Practical Computer Networks
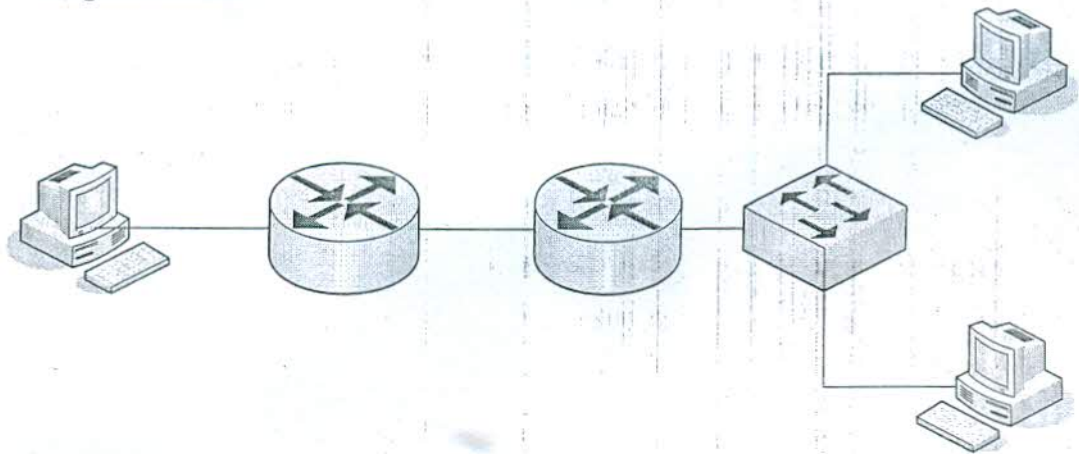
Credit Unit: 3   Time: 2 hours

INSTRUCTION: Attempts ONLY 4 questions with at least ONE question from each SECTION.

SECTION A

Question 1.
  a. Identify the **Collision domains** and **Broadcast domains** in the network diagram below.

  b. What is meant by the Network topology? Describe any two Network Topologies you know.
  c. List 5 networking hardware devices you know.

Question 2.
  a. What is MAC address?
  b. What is Carrier Sense Multiple Access with Collision Detection (CSMA/CD)? How does it aid transmission on an Ethernet connection?
  c. List any three (3) types of Ethernet Cable you know. Illustrate how they are terminated on the connector.
  d. What is the name of the connector mentioned in 2c above?

SECTION B

Question 3.
  a. List the various layers of the OSI model. Explain how they operate.
  b. Relate the layers of the OSI model to the TCP/IP model.
  c. Explain the concept of 3-way handshake. At which layer of the OSI model does it occur?

1

Question 4.
   a. What is a Routing Table?
   b. Mention 3 types of routes used for routing. Explain two (2).
   c. Populate the routing table in Figure 1 below.

SECTION C

Question 5.
   a. Mention 4 internet layer protocols.
   b. Mention any 2 differences between IP address and MAC address.
   c. What is the IP address range for class A, B and C IP addresses?
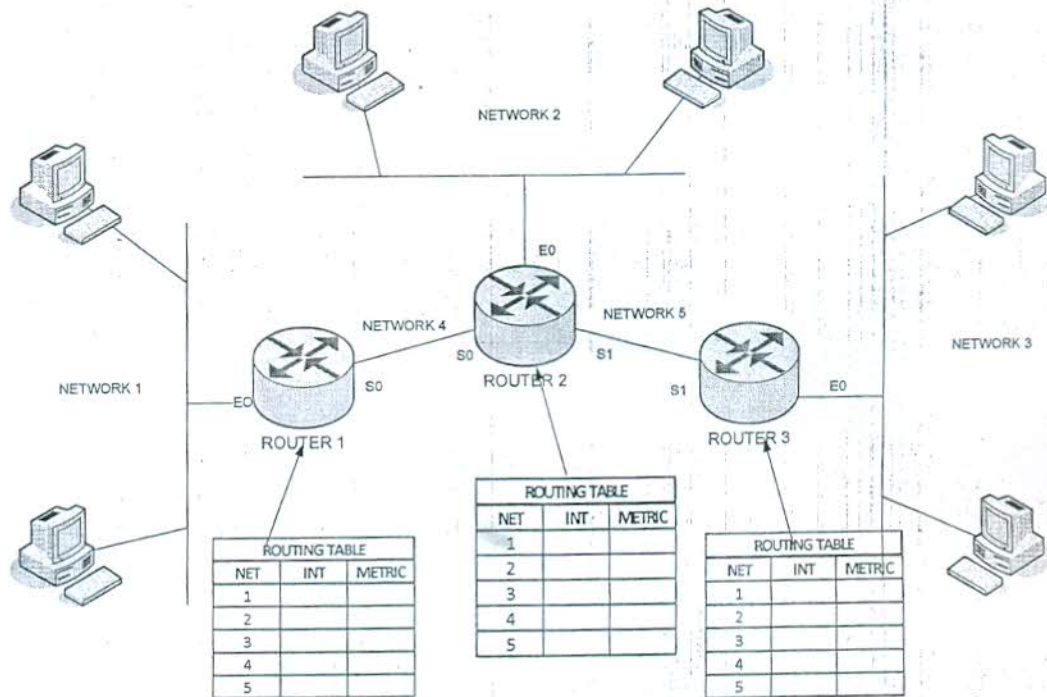   d. What are the port numbers for HTTP, FTP, TELNET and HTTPS services?

Figure 1: Question 2

Question 6.
   a. List 3 types of Broadcast addresses you know?
   b. Give two (2) reasons why Subnetting is necessary in IP networks.
   c. You have been given an IP address 10.10.0.0/22 by you ISP to implement on your network. Use the IP address to create 3 network addresses to be assigned to the networks (A, B and C). What will be the network and broadcast addresses? What are the valid host addresses on each network? How many hosts do you have on the networks? (Show any working you might have done to arrive at your answers).