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CS610 Computer Networks

Final Term Examination – Spring 2005

Time Allowed: 150 Minutes

Please read the following instructions carefully before attempting any question:

1. This examination is closed book, closed notes, closed neighbors.
2. Answer all questions.
   a. There is no choice.
   b. You will have to answer correctly all questions in this examination to get the maximum possible marks.
3. Do not ask any questions about the contents of this examination from anyone.
   a. If you think that there is something wrong with any of the questions, attempt it to the best of your understanding.
   b. If you believe that some essential piece of information is missing, make an appropriate assumption and use it to solve the problem.

****WARNING: Please note that Virtual University takes serious note of unfair means. Anyone found involved in cheating will get an `F` grade in this course.**

Total Marks: 75 **Total Questions: 06**

Question No. 1 **Marks : 10**

Given the following technologies, determine which characteristics apply by placing an 'X' in the appropriate place.

Technology	Connection-Oriented	Connectionless	used for LAN	used for WAN
Ethernet				
Token Ring				
FDDI				
Frame Relay				
SMDS				
ATM				
LocalTalk				

Question No. 2 **Marks : 10**

Fill in the blanks.

1. TCP/IP protocols use the name _____ to refer to an internet packet.
2. The process of using a routing table to select a next hop for a given datagram is called _____.
3. The translation from a computer's protocol address to the equivalent hardware address is known as _____.
4. The _____ field in frame header specifies that the frame contains an ARP message.
5. The basic hardware component used to connect heterogeneous networks is known as _____.
6. TCP/IP protocol is organized into _____ conceptual layers.
7. The Suffix part of a Class 'B' network contains _____ octets.
8. 224.49.53.9 is a class _____ address.
9. If congestion in a network persists, the entire network can become unusable. This condition is known as _____.
10. _____ is a measure of the rate at which data can be sent through the network.

Question No. 3 **Marks : 25**

Answer the following questions briefly?

a) **Briefly define the two main points of the "Locality of Reference Principle"?**
b) **Briefly define the function of a Network Analyzer with an elaboration of the term "Promiscuous Mode"?**
c) **What is the difference between a Bridge and a Repeater?**
d) **Name the three Address Resolution Techniques?**
e) **Differentiate between Static and Dynamic Routing?**

Question No. 4 **Marks : 10**

Convert the following 32-Bit Binary addresses into their equivalent Dotted Decimal Notation?

32-bit Binary Number	Equivalent Dotted Decimal
10000001 00110100 00000110 00000000	
11000000 00000101 00110000 00000011	
00001010 00000010 00000000 00100101	
10000000 00001010 00000010 00000011	
10000000 10000000 11111111 00000000	

Question No. 5 **Marks : 10**

Draw the OSPF Graph for the following network?

Question No. 6 **Marks : 10**

Given the IP address and subnet mask 192.168.10.0 and 255.255.255.224

a) What is the maximum number of subnets in the network?
b) What is the number of hosts?
c) What are the valid subnets?