Data Communication and Computer Networks

Assignment 1

Submission on:_____

1. What is “Signal encoding Techniques”?
2. a) What is the difference between a port address, a logical address, and a physical address?
   b) Compare OSI model and TCP/IP protocol suite.
3. Define the digital hierarchy used by telephone companies and list different levels of the hierarchy.
4. Compare and contrast a circuit-switched network and datagram networks.
5. a) What are the differences between classful addressing and classless addressing in IPv4?
   b) What are the differences between routing and forwarding?
   c) Compare unicast and multicast routing protocols.
6. a) Compare the TCP header and the UDP header. List the fields in the TCP header that are not present in UDP header. Give the reason for their absence.
   b) What is congestion? Explain any one of the congestion control mechanism.
7. What are the main categories of DNS messages? Explain.
8. Write short notes on:
   a) Electronic mail
   b) Voice over IP
   c) HTTP.

IP Addressing

1. Change the following IPv4 addresses from dotted-decimal notation to binary notation.

a. 111.56.45.78

b. 221.34.7.82

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2. Find the error, if any, in the following IPv4 addresses.

a. 111.56.045.78

b. 221.34.7.8.20

c. 75.45.301.14

d. 11100010.23.14.67

3. Find the class of each address.

a. 00000001 00001011 00001011 11101111

b. 11000001 10000011 00011011 11111111

c. 14.23.120.8

d. 252.5.15.111