COMILLA UNIVERSITY
Faculty of Engineering
Department of Computer Science & Engineering
3rd Year 2nd Semester B.Sc. (Engg.) Final Examination '14, Session 2011-2012
Course Code: CSE-328
Course Title: Computer Networks

Full Marks: 60 **Time: 3 Hours**

Answer any five questions.
N. B. Figures in the right margin indicate marks

1. (a) Show the comparison between computer networks and distributed system. [3]
(b) What is ARPANET? Describe briefly the TCP/IP reference model. [4]
(c) Discuss the goals and uses of computer networks. [3]
(d) How packets sent in a simple client-server interaction on a connection-oriented network? [2]

2. (a) Explain with figure "The internet Architecture". [3]
(b) What are the criticisms of TCP/IP model or OSI model? [3]
(c) Name and define the functions of a data link layer. Explain with diagram how data link layer works in the internet. [5]
(d) What is piggybacking? [1]

3. (a) What is Manchester coding? Convert the binary code 11011001 into different Manchester code with timing diagram. [3]
(b) Explain the Collision Free Protocols. [3]
(c) Show the poor performance of static FDM from a simple queuing theory calculation. [3]
(d) Discuss about error correcting and detecting code. [3]

4. (a) Find the error of the following IP address **111.56.045.78** and **75.45.301.14** [2]
(b) Given the network address **132.21.0.0.** Find the class, the block and the range of the addresses. [3]
(c) A company is granted the site address **181.56.0.0 (class B).** The company needs **1000 subnets.** Design the subnets. [3]
(d) A company needs **600 addresses.** Which of the following set of class C block can be used to form a super net for this company? [2]

(i) 198.47.32.0	198.47.33.0	198.47.34.0	
(ii) 198.47.32.0	198.47.42.0	198.47.52.0	198.47.62.0
(iii) 198.47.31.0	198.47.32.0	198.47.33.0	198.47.52.0
(iv) 198.47.32.0	198.47.33.0	198.47.34.0	198.47.35.0

(e) We need to make a super network out of 16 class C blocks. What is the super net mask? [2]

5. (a) Compare the TCP header and UDP header. List the fields in the TCP header that are missing from UDP header. [4]

(b) What is the maximum size and minimum size of the TCP header? [2]

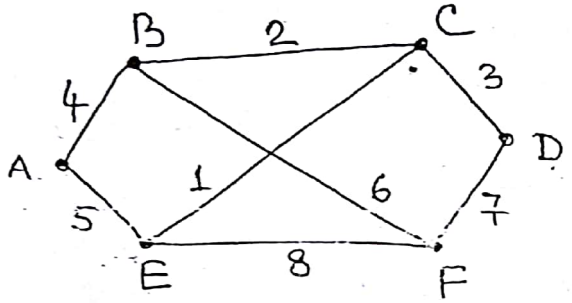
(c) In a TCP connection, the initial sequence number at client site is 2171. The client opens the connection, sends only one segment carrying 1000 bytes of data, and closes the connection. What is the value of the sequence number in the SYN segment sent by the client? [4]

(d) Give a comparison between POP3 and IMAP. [2]

6. (a) How network layer provide services to the transport layer? [2]

(b) Compare the datagram and virtual-circuit subnets. [4]

(c) Explain link state routing algorithm. From the following network [6]



(i) Build link state packets.

(ii) Distribute the link state packet buffer for router B.

7. (a) Mention five services primitives for a simple transport service. [2]

(b) What is Tunneling? Describe three-way handshaking method with figures. [3]

(c) Define socket. Write down the socket primitives for TCP. [3]

(d) Explain the relationship between NSAP, TSAP and Transport Connection. [4]

8. Write short notes on (Answer any four) [4*3]

(a) DNS

(b) WWW

(c) Bluetooth

(d) 802.3

(e) 802.11