END TERM EXAMINATION

SIXTH SEMESTER [B.TECH/M.TECH] MAY-JUNE 2015

Paper Code: IT-304 **Subject: Computer Networks**

Time: 3 Hours **Maximum Marks: 60**

Note: Attempt any five questions including Q.no.1 which is compulsory. Select one questions from each Unit.

Q1 (a) What is the significance of twisting in twisted pair cable? **(2)**

(b) What field in the IP datagram header is used to avoid forwarding datagram's endlessly through routing loop? How is that header used to accomplish that? **(2)**

(c) What is subnet masking? Discuss. **(2)**

(d) What is the difference between packet switching and circuit switching? **(2)**

(e) What is early token release? **(2)**

(f) Explain the three types of frames in HDLC. **(3)**

(g) How is the minimum size of the Ethernet frame determined? How is it related to slot time? **(3)**

(h) Compare the data rates for Standard Ethernet, Fast Ethernet, Gigabit Ethernet, and Ten-Gigabit Ethernet. **(2)**

(i) Define slow start. **(2)**

Unit-I

Q2 (a) Explain the various layers present in TCP/IP reference model and their functions. **(7)**

(b) Explain the three types of transmission impairment? **(3)**

Q3 Explain the difference between guided media and unguided media. Briefly explain any three methods used for data transmission using guided media and any two methods used for data transmission using unguided media. **(10)**

Unit-II

Q4 With an example, illustrate how Cyclic Redundancy Check encoder and decoder will work. **(10)**

Q5 With the help of packet sequence (timing) diagram, show the operation of go-back-n ARQ when

(i) Data packet (ii) ACK packet (iii) NAK packet is corrupted. **(10)**

Unit-III

Q6 (a) Explain the addressing mechanism of IEEE 802.11 standard. **(4)**

(b) Explain in detail the problems associated with IEEE 802.11 standard. **(6)**

Q7 (a) Compare and Contrast CSMA/CD with CSMA/CA. **(6)**

(b) Explain the loop problem associated with bridges. **(4)**

Unit-IV

Q8 (a) What are the differences between classful addressing and classless addressing in IPv4? **(5)**

(b) Find the netid and hostid of the following IP addresses: **(2)**

(i) 114.34.2.8 (ii) 208.34.54.12

(c) A block of address is granted to a small organization. We know the IP address of one host is 182.44.82.16/26. What is the first address and last address in the network. **(3)**

Q9 Explain the principles of congestion control in TCP. **(10)**

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