(Please write your Roll No.) Roll No: -

First Term Examination

6th Semester [B. Tech] CSE **February, 2018**
Paper Code: - ETCS 306 **Paper Title: Computer Network**
Time: -1½ hour **Max Marks: - 30**

Note: - Q.No.1 is compulsory. Attempt any two more questions from the remaining three questions.

Ques 1. **(2*5 marks)**

a) In the sliding window protocol, can the sender receive an ACK for a packet that falls outside its current window? If yes, specify the scenario under which this occurs as well
b) What is the difference between circuit switching and Packet switching?
c) Give two advantages of using optical fiber cable compared to coaxial cable.
d) In stop and wait ARQ, what happens if a negative acknowledgement is lost in transit?
e) A binary signal is sent over a 3-kHz channel whose signal-to-noise ratio is 20dB. Calculate the maximum achievable data rate?

Ques 2.

a) For 'n' devices in a network, what is the number of cable links required for a mesh, ring, bus and star topology? (2 marks)
b) How do the layers of the TCP/IP protocol suite correlate to the layers of the OSI model? (5marks)
c) Briefly discuss the role of following devices in context of networking.

(i) Repeater

(ii) Gateway (3 marks)

Ques 3.

a) An 8-bit byte with binary value 10101111 is to be encoded using an even-parity Hamming code. What is the binary value after encoding? (5 marks)
b) How throughput is improved in slotted ALOHA over pure ALOHA? (3 marks)
c) What is CSMA? How p-persistent CSMA is different form non-persistent? (2 marks)

Ques 4.

a) For a generator polynomial of x^3+x^2+1, what is the CRC value if the message is 10011010? Express answer as a bit sequence with no spaces (5 marks)
b) How is selective repeat better than Go-Back N, Explain? (5 marks)

(Please write your roll no immediately) Roll No .....

First -Term Examination

VIth Semester [B.Tech(CSE)] **Feb 2017**
Paper Code: ETCS-306 **Sub: Computer Network**
Time: 1:30Hrs **Max Marks: 30**

Note: Q.No is compulsory and attempt any two more questions from the remaining.

Q.1 (2 *5)

(a) Explain the difference between an Internet draft and a proposed standard.
(b) In the ring topology what happens if one of the station is unplugged?
(c) Explain why collision is an issue in random access protocols but not in controlled access protocols.
(d) How does a single bit error differ from a burst error?
(e) Describe the need for switching.

Q.2

(a) Discuss the functions of all layers of OSI model. (4)

(b) What is transmission medium? Discuss various propagation modes in the fiber optics. (4)

(c) Compare the throughput of a pure ALOHA network with a slotted ALOHA network. (2)

Q.3

(a) Why channel allocation is a difficult task? Explain the random access method that tries to avoid collision. (5)

(b) A bit stream 10011101 is transmitted using the standard CRC method. The generator polynomial is x^3+1. Show the actual bit string being transmitted. Suppose a bit is inverted during transmission. Show how this error is detected at the receivers end. (5)

Q.4

(a) What are various design issues involved in the data link layer? Explain sliding window protocol. (4)

(b) State and explain various frame types in HDLC. (3)

(c) If the 7-bit Hamming code word is received by a receiver is 1011011. Assuming the even parity state, find whether the received code word is correct or wrong. If wrong, locate the error and correct the code word. (3)