Daffodil International University

Department of Computer Science and Engineering
Faculty of Science & Information Technology
Midterm Examination   Semester: Summer 2019
Course Code: CSE 233 (Day)   Course Title: Data Communication

Time: 1.5 hours   Full Marks: 25
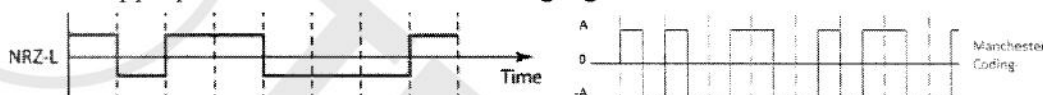
Part A: Answer the following questions (1-5) in brief.   5*2=10

1. Explain the fundamental characteristics of data communication which makes the data communication effective.
2. In an internet we change the LAN technology to a new one. Which layers in the TCP/IP protocol suite need to be changed?
3. Find the appropriate data bit of the following signal scheme.

4. Assume we want to connect two isolated hosts together to let each host communicate with the other. Do we need a link layer switch between the two? Explain.
5. What is the difference between a port address, a logical address and a physical address?

Part B: Answer _ALL_ Questions   5*3=15

1. a) Suppose you are at the receiver side of a network and you are measuring the signal   3
      strength of a message that is sent by your friend. You found that the signal power
      sent by your friend is twice as the signal your received. What type of transmission
      impairment happened here? How can you solve this issue? Measure if the signal has
      lost or gained strength.
   b) We need to send 265 kbps over a noiseless channel with a bandwidth of 20 kHz.   2
      How many signal levels do we need?

2. a) Convert this data (0110101101) to digital signals using the following techniques: 3
      NRZ-I, Differential Manchester, MLT-3.
   b) Explain the components of Delta modulator.   2

3. a) Explain the implementation process of Amplitude Shift Keying with appropriate   3
      diagram.
   b) Find the total number of channels in the corresponding band allocated by FCC.   2
      * AM   * FM