

ELEX 4550 : Wide Area Networks  
Term 201730

MID-TERM EXAMINATION #2  
1:30 AM – 2:20 PM  
November 6, 2017

*This exam has two (2) questions on six (6) pages. The marks for each question are as indicated. There are a total of 12 marks. Answer all questions. Write your answers and all rough work in this paper and nowhere else. Show your work. Draw a box around your final answer. Numerical answers must include units. Books and notes are allowed. No electronic devices other than calculators are allowed.* Show your work.

This exam paper is for:

Exam 1 A00123456

Each exam is equally difficult.  
Answer your own exam.

Do not start until you are told to do so.

Name: \_\_\_\_\_  
BCIT ID: \_\_\_\_\_  
Signature: \_\_\_\_\_

Question	Mark	Max.
1		6
2		6
Total		12

**Question 1 ( 6 marks)**

The value of H1/H2 in the transport overhead of a SONET frame decreases by 1 every millisecond.

- (a) What is the difference between the payload and SONET data rates in bits/second?
- (b) Is the payload clock rate faster or slower than the SONET clock rate? Why?
- (c) If this is an OC-1 SONET link, what is the payload data rate?



**Question 2 ( 6 marks)**

Appletalk was an early networking protocol. Write out the bytes of a PPP frame that encapsulates an Appletalk frame consisting of the five bytes: 0x00, 0x08, 0xf3, 0x7e, 0x5e. Appletalk's PPP protocol number is 0x29. You may set the FCS (CRC) value to zero. Assume the default link configuration. Give your answer in hexadecimal.



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This exam paper is for:

Exam 2 A00123456

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Name: \_\_\_\_\_  
BCIT ID: \_\_\_\_\_  
Signature: \_\_\_\_\_

Question	Mark	Max.
1		6
2		6
Total		12

**Question 1 ( 6 marks)**

The value of H1/H2 in the transport overhead of a SONET frame increases by 2 every millisecond.

- (a) What is the difference between the payload and SONET data rates in bits/second?
- (b) Is the payload clock rate faster or slower than the SONET clock rate? Why?
- (c) If this is an OC-1 SONET link, what is the payload data rate?





**Question 2 ( 6 marks)**

Appletalk was an early networking protocol. Write out the bytes of a PPP frame that encapsulates an Appletalk frame consisting of the five bytes: 0x00, 0x08, 0xf3, 0x07d, 0x5e. Appletalk's PPP protocol number is 0x29. You may set the FCS (CRC) value to zero. Assume the default link configuration. Give your answer in hexadecimal.



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