**Last Name: First Name:**

# Your Sentence:

# TAKE HOME ASSIGNMENT#1 IT360 Spring 17

**Task1: Take Home Quiz** **(Due by: 09:00AM on Tuesday, Jan 17th 2016)**

**Instructions for Task1:** *To avoid any penalty, you must follow the instructions.* *5 points will be deducted from inclass quiz for not following instructions and/or notsubmitting.*

* Complete all sections as instructed below in a word (.doc) file as per the attached format.
* Use one of the following sentences, based on your Tech ID, as explained below to code for each of the sections. *Note that a dot is included at the end of the sentence. Also include the serial number. Write the sentence allocated to you on the top of each page.*
* Solution should be in a word file. The name of the word file must be ‘Your LastName+ FirstName+360TH1’ and extension doc. (e.g. if your name is Joe Bloe, the file name should be BloeJoe360A1.doc
* **Upload** your word fileto ‘WaveformSubmission’ folder in D2L before the due date and time.
* You may follow any one of the following approaches to draw the waveforms. 1) Draw the waveforms electronically directly in the word document. OR 2) Draw the waveforms manually on graph papers using dark pencils or black pen. You may then scan and insert it in the appropriate position in the word document. Make sure that the lines on the graph paper are visible and waveform is distinctive.
* **Submit** a printed version of your answer for **all sections** before the due date and time. Attach this page as your cover page.

***Section A****:* Write the encrypted output character stream (cipher text) of the sentence using mono-alphabetic substitution (see section 30.2 on page 935 of your text) with key=5 (e.g. ‘A’ substituted with ‘F’).

***Section B:*** Write a bit stream replacing each character of the cipher text in section A with an 8 bit binary code that includes 7-bit ASCII code and 1 parity bit. (use even parity). The parity bit should be added as the most significant bit (MSB) i.e. the left most bit. There MUST not be any BLANKSPACE between any bits in the sentence bit stream. However, it can continue to the next line when no more bits can be accommodated on a given line. Underlined bit will represent parity bit (example: at -> 1110000101110100).

*Note: upper/lower cases, special characters and spaces in the sentence must also be represented in ASCII code*.

***Section C:*** Express the bit stream in Section B in hexadecimal system. There MUST NOT be any space between the hexadecimal digits. (Example: 0111001001101001 -> 7269)

***Section D:*** Draw a two level waveform representation of the binary stream from section C on a graph paper. Use positive level for bit ‘1’ and negative level for bit ’0’. (use dark pencil or black pen).

***Section E****:* Draw a sixteen level waveform representation of the hex stream from section C on a graph paper. (use dark pencil or black pen).

**Allocation of Sentence:** You should choose one of the following sentences based on your Tech ID. You should divide your tech id by 4 and find out the remainder. If your remainder is 0, only then find your new remainder by adding ‘2’ to your original remainder. Use this number to select one of the following sentences. Note that you must include the serial number and the terminating ‘.’. Consider only one space between words i.e. there are no two consecutive spaces.

1. How are you?
2. Did you go?
3. Missing item.

**Task2: IN CLASS QUIZ: (15 points)**

(On Tuesday, Jan 17, 2017 for sec 02)

(On Wednesday, Jan 18, 2017 for sec 01)

In the class, each student will complete similar task to code English sentences to binary, hex and waveforms and/or to decode a binary/hex/waveforms to reproduce the original sentence. Students may use pencil to complete any initial rough work, but the final answer submission must be completed using a PEN. The pen work must be neat without any correction on it.

**Last Name: Bade First Name: Tyler**

**Your Sentence: Did you go?**

**Section A:** (Encrypted sentence – cipher text)

Ini%`tz%ltD

**Section B:** (Bit stream of the cipher-text with parity):

0100010001101001111001001010000011111001011011111111010110100000111001110110111100111111

**Section C:** (Hex representation of the bit stream)

4469E4A0F96FF5A0E76F3F

**Section D:** (Two level waveform of the bit stream)



1

0

1

0

1

0

1

0

**Section E:** (Sixteen level waveform of the bit stream)



F

E

D

C

B

A

9

8

7

6

5

4

3

2

1

0