**CIS 21JA - Assignment 1 Name: Mega Putra**

1/2 pt for each questions 1-9, total 10 pts

*Note: all binary values have a space inserted at every 4 bits to make it easier to read, the space is not part of the actual data value*  
  
1. The most significant bit in a binary word is bit number **15**

*Note: To get credit for questions 3 – 8: show all work and use the shortest way*

3. Convert decimal 19 to binary, show the result as a byte of data

19/2 = 9R1

9/2 = 4R1

4/2 = 2R0

2/2 = 1R0

1/2 = 0R1

result in byte: 0001 0011  
  
4. Convert decimal -9 to hexadecimal. Show the result as a doubleword of data

1. Take the absolute value: 9  
2. Convert the positive decimal to hexadecimal:  
9/126 = 0R7  
hexa : 7  
3. Zero fill in front if needed.  
7 hex to doubleword binary is 0000 0000 0000 0111   
4. Negate the answer by using 2's complement  
negation of 0000 0000 0000 0111   
reverse 1111 1111 1111 1000   
 1+   
 1111 1111 1111 1001 back to hex is FFF9

5. Convert hexadecimal 1C to binary, show the result as a byte of data

1 = 0001

C = 1100   
byte result = 0001 1100

6. Convert the binary byte 1001 1001 to an unsigned decimal

2^7 + 2^4 + 2^3 + 2^0 = 153  
  
7. Convert the same binary byte 1001 1001 to a signed decimal

Abs value = 0110 0111

Conversion = 2^6 + 2^5 + 2^2 + 2^1+ 2^0 = 103

Negate = -103  
  
8. Do the following binary subtraction in the same way that the CPU would do the subtraction. Show the result of the subtraction as a byte of data  
 1001 0100 – 1010 1010

2’s complement of 1010 1010 is 0101 0110

1001 0100 + 0101 0110 = 1110 1010  
  
9. If X is false, Y is false, and Z is true, show the result of: X and (Y xor Z)  
 F ^ ( F XOR T)

=F ^ T

=F

10. (5pts) Follow the instructions at the link "Setting up your IDE for MASM" (in module 1) to set up the IDE with an assembly language project that you can use for the rest of the quarter to write your assembly programs.

Then do the following steps to complete the work:

1. At the Solution Explorer window of the IDE, right click on the hello.asm name and select "Remove". This will remove the file from theproject.
2. Download the assignment1.asm file. Then right click on the Project name and select "Add Existing Item". Find the assignment1.ams file and select it to add it to the project.
3. Follow the instruction in the assignment1.asm file to modify the code.
4. Build and run the program.
5. Take a screen shot of your program output (the black screen with output text) and copy it in the space below. Make sure you take a screen shot of the output (you should have an image file). Don't just copy and paste the text output.

(Please find screenshot below)

