

## Quiz # 1

Time: 20 min

1. Given the following XHTML fragment, what is the state of the stack (recording the opening tags that have not yet been matched) at the end of this fragment? -4

<xhtml> <body> <p>1b. If  $\lg(\langle i \rangle n \langle /i \rangle) = \log_{\langle sub \rangle 2 \langle /sub \rangle}(\langle i \rangle n \langle /i \rangle)$   
=  $\langle i \rangle x \langle /i \rangle$  then what is  $\log_{\langle sub \rangle 16 \langle /sub \rangle}(\langle i \rangle n \langle /i \rangle)$  in terms of  
 $\langle i \rangle x \langle /i \rangle$ ?</p> <p>1c. Show that  $\lg(2 \langle i \rangle n \langle /i \rangle) = 1 + \lg(\langle i \rangle n \langle /i \rangle)$  and  
that  $\ln(2 \langle i \rangle n \langle /i \rangle) = \ln(2) + \ln(\langle i \rangle n$

2. Analyze the following code and find out their complexity in terms of Big-O notation (try making these upper bound tighter): -3

```
void complexity_1() {
    int i,j,k,n;
    for(i=1;i<=(n/4);i++) {
        for(j=99;j<=i;j++) {
            for(k=1;k<=1000000000;k++) {
                printf("Hello Munaz!");
            }
        }
    }
}
```

3. Fill the following table for singly linked list with appropriate Big-O or Big-theta notation.

-5

	Front/1 <sup>st</sup> node	k <sup>th</sup> node (Current position)	Back/n <sup>th</sup> node
Insert After			
Replace			
Find			
Insert Before			
Erase			

4. Write down the importance of “**TEAMWORK**”. 😊😊😊 (maximum 40 words)

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