**CS 5/7350**

**Quiz #2 Due Feb 22 for Completion Grade**

Name & ID:\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_

1. [1.5 pts] Determine a Huffman encoding for each symbol in a message that contains:

20 As,

20 Bs,

7 Ds,

7 Es,

3 Fs,

3 Gs,

2 Hs

2 Ks

How many bits are in the entire message if each symbol is encoded with 3 bits?

How many bits are in the entire Huffman coded message?

1. [2 pts] You run different programs for various values of “n” and create 4 tables of the runtimes.  Give the Asymptotic bounds that each of the tables support?



1. [1 pts] What is (– ¼) modulo 7?
2. [1 pts] Two people need to establish a secret key for encrypting communications. They agree to use a Diffie-Hellman key exchange with a modulus of 11 and decide on 2 as the base. Person A chooses a random value performs the appropriate computations and sends the value 6 to person B. Person B chooses a random value of 3 and performs the appropriate computations:
3. What is the value Person B sends to Person A
4. What is the shared secret key between Person A and Person B