Homework #11 Key

5.13

Huffmans algorithm assigns codewords of length 1 to T, length 2 to A, and length 3 to C and G. So, one possible encoding can be 0 for T, 10 for A, 110 for C and 111 for G.

5.14

(a) $a \to 0$, $b \to 10$, $c \to 110$, $d \to 1110$, $e \to 1111$

(b) length $= \frac{1000000}{2} \cdot 1 + \frac{1000000}{4} \cdot 2 + \frac{1000000}{8} \cdot 3 + 2 \cdot \frac{1000000}{16} \cdot 4 = 1875000$