
CS 380

Home work 10: Solution

All of them are Special Encoding Problem Assigned by Dr. Langston

If you find any error in the solution (Email to rnath1@cs.utk.edu)

(3 points) 1. What's the smallest i such that $L(M_i) \neq \emptyset$?

Answer: 1110101001010111 in base-2

(3 points) 2. What's the first string in $\overline{L_d}$?

Answer: $1^3 010^2 10^2 1010 1^3$

(3 points) 3. What's the first string in L_u ?

Answer: $1^3 01010^2 1010 1^3 0$

(3 points) 4. Write the encoding of a TM that recognizes 1010^+ .

Answer: $1^3 010^2 10^2 1010^2 1^2 0^2 1010^3 1010^2 1^2 0^3 10^2 10^4 1010^2 1^2 0^4 1010^5 1010^2 1^2 0^5 1010^5 1010^2 1^2 0^5 10^3 10^6 1010^2 1^3$