Q7

Parameters of simulator

$$x_1, x_2, \cdots, x_m \quad FP$$

Step 0 Design of algorithm

Initialize population P_0 randomly
for $i = 1$ to MaxGenerations do
begin

Evaluate Fitness of individuals
{ Use Simulator }

Select parents for reproduction
{Roulette wheel}

Crossover
{ Normal FP array Xover }

Mutation
{ Non-uniform mutation
for FP genes }

Replacement
{ Elitist strategy }

Step 1 Design of chromosome

Key   1 : Low   −1 : Not L
        2 : Medium   −2 : Not M

3 : High   —3 : not H
                0 : quny Not applicable

R1			R2			
1	2	3	−1	0	2	- - -

R1

IF x_1 = L AND x_2 = M THEN Y = H

R2

IF x_1 = not L THEN Y = M

Variable - lengthed chromosome.

step2   Fitness

Apply fuzzy system to
correctly respond to output
of simulator

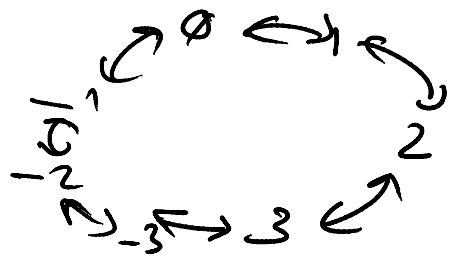Fitness = $\frac{1}{error}$

step 3 Selection
     Normal roulette wheel
        selection
NOTE : should be explained.

step 4 Crossover

   Crossover between Chromosomes
        3 rules of random No. 3 rules

step5 Mutation

$\circlearrowright$ ∅ $\leftrightarrow$ 1 $\curvearrowright$

1 $\curvearrowright$

$\frac{-1}{6}$

-2 2

$\leftrightarrow$ -3 $\rightarrow$ 3 $\curvearrowleft$

1/3 add 1

1/3 subtr. 1

1/3 Negate.

Step 6 Replacement

Elitist strategy.