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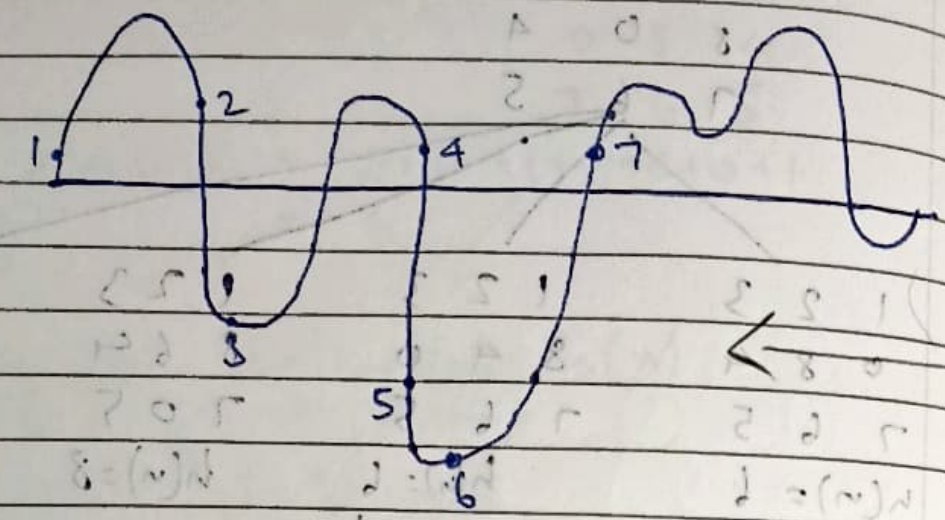
Stimulated Annealing Algorithm

1. Set current state: initial state
2. choose an initial temperature
3. Set best state = current state
   set current Energy = evaluate (current state)

while temp > 0 & interation < max_iteration
for iteration = 1 to maxIteration do
new state = generate Neighbour (current state
new Energy = evaluate (new state)
energy difference = new Energy - Current Energy
if energy Diffrence < 0 then
current State = new state
current Energy = new energy.
if current Energy < best Energy then
best State = Current state
best Energy = Current Energy.
Else
1. Accept with a certain probability
2. Accept Probability = exp(- Energy Diffrence / temp)
3: If random (0,1) < acceptance Probability
then
1. Current State = new State
2. Current Energy = new Energy.
// cool down temperature.
temperature = temperature cooling Rate
Return best State.



Output

Enter initial state : 50

initial temperature : 20

cooling rate (0 & 1) : 0.5

the no. of iterations : 5

Iteration 1 : current state = 49.0489,

Energy = 2401.7898

2 : 49.0489 , = 2905.7898 = 5.00

3 : 48.8662 , = 2387.9069 = 2.5

4 : 48.8900 , = 2351.2721 = 1.25

5 : 48.0291 , = 2306.7922 = 0.625

Best state = 48.0291 , Best Energy = 2306.792