Student ID= MCE 079 05538 Student Name= ABDUL BARI Subject = Evolutionary Algoriethm. (MCSE-662) Assignment NO-03.

Over 10, 1, ---, 154. Consider population size 4, 1- Point Cross over and 50% metation.

The Solution: 1. Gunerale initial population at bandom. They are Chromesomes or Grenotype.

01111 (15), 01100(12), 01000(8)

2. Calculate Jitness/Evaluate Jitness: a) Evaluate fitness, f(x) = x-5x+10;

3. Select parents (2 individuals) based on their fitnessis is Pi:

$$P_{i} = \frac{\gamma}{f_{i}} / \left( \frac{\gamma}{j+1} F_{j} \right)$$

Fi = Jitness for String i is population.

Pi = Prob of String i being selected.

n = no. of individuals.

nxPi = is expected Count.

Strieng	A Committee of the Comm	2 Value	fitness f(2)=2-52	Pach i	Expected
No	Population		+ 10		nd Bobability
1	01111	15	160	0.38	1.52
2	01100	12	.04	0.22	0.88
3	0 1000	8	34	0.08	0.32
4	01110	14	136	0.32	1.28
Sum	ERF Afficia Li Chris different maren di infrantezione del Primer in sensibili indicidi prime di indicidi producti con din	a met ikus men tripakinya menyilikusa K.C.NI ikus makaman kemancah salahada	424	1.00	e en archivet renegation announces account en announces.
AVA			106	0.25	1
Max			160	0.38	1.52

Probe = 
$$\frac{3(2i)}{5am} = \frac{160}{424} = 0.38$$
  
=  $\frac{3(2i)}{5am} = \frac{94}{424} = 0.88$   
 $\frac{4(2i)}{5am} = \frac{34}{424} = 0.08$   
 $\frac{3(2i)}{5am} = \frac{34}{424} = 0.08$   
 $\frac{3(2i)}{5ab} = \frac{136}{424} = 0.32$ 

4. Crossover: 1 point Crossover.

Strang	Mating	Coomover	offspring	2 Value	Fitness = 2
No.	Pool	Point	after xover	X VIIII	1(2) = 2 <sup>4</sup> - 52410
Specifical Control of the Control of	011111		01100	12	94
2	011/00	3	01111	15	160
1	01/111	2	01110	14	136
4	0 1/1 10	2	01111	15	160
Sum	geograficit Actions to the service of the service o	<ul> <li>Busilanett Lissina kita. Mekabat and erotical electricolis processors.</li> </ul>	© гоборов. В в Фенграция на причения на причения подружения на причения подружения под	and an electric residence of the second seco	550
AVG					138
hax					160

## 5. Mutation: 50%

String No.	affer xover	offspring after Mutation	2 Value	Fitness f(x)=x-5x +10
1	01100	01110	14	136
2	01111	01111	15	160
3	01110	01111	15	160
4	01111	01111	15	160
Sum		The second section of the second	обочный то то то то стором в подом в подом в подом в то до то подом в то подом в подом в подом в подом в подом	616
Ava				154
Max				168