

Topic.....

$$A_{23} = \frac{1}{2} \times 2 \times 0.4 = 0.4$$

$$x_{23} = 8.66$$

$$A_j = \frac{0.4 + 0.4 + 2.4}{3.2}$$

$$x_j = \frac{0.4 \times 1.33 + 2.4 \times 8 + 0.4 \times 8.66}{1.2}$$

$$= 4.998$$

$$\frac{A_1 x_1 + A_3 x_3}{A_1 + A_2} = \frac{(2.1)(1.857) + (3.2)(4.998)}{2.1 + 3.2} = 3.753$$

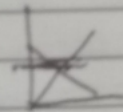
(1)

Q. Shreegas Plot Kern
with A71511193

Q.1) X_1 X_2
a) J_{11} at $P \Rightarrow u = 0.4$ " $N \Rightarrow u = 0.8$
" $2 \Rightarrow u = 0.6$ " $2 \Rightarrow u = 0.2$

Q.2) R_1
 $R_1 \rightarrow R_2 \rightarrow R_3 \rightarrow R_4$
 R_1 0.6 0.8 0.6 $N \sim P$
 R_2 0.6 0.2 0.2 $L \sim M$
 R_3 0.4 0.8 0.4 $L \sim M$
 R_4 0.4 0.2 0.2 $L \sim M$

$R_1 \rightarrow A_{11} =$



$$\frac{1}{2} \times 3 \times 0.6 = 0.9$$

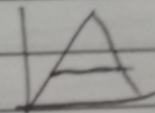
$$X_{11} = 5 - 2 = 3$$

$$A_{12} = 0.6 \times 2 = 1.2$$

$$X_{12} = 1$$

$$\Rightarrow A_1 = 2.1, X_1 = \frac{0.9 \times 3 + 1.2 \times 1}{0.9 + 1.2} = 1.757$$

$$R_2 \rightarrow A_{21} = \frac{1}{2} \times 2 \times 0.9 = 0.9$$



$$X_{21} = \frac{2}{3} \times 2 = 1.33$$

$$A_{22} = 0.9 \times 6 = 5.4$$

$$X_{22} = 2 + 3 = 5$$

Teacher's Sign.....

Topic.....

Date.....

Distance between to join C_1		C_2
2	3.5	0.707 2.6
2.5	4	0 3.27
1.2	1	0
5	0	3.93

Cluster 1 Cluster 2
1, 2 3, 4

Update strings

$$\begin{pmatrix} \frac{2+2.5}{2} \\ \frac{3.5+4}{2} \\ \frac{1.2+5}{2} \\ \frac{1+0}{2} \end{pmatrix} = \begin{pmatrix} 2.25 \\ 3.75 \\ 3.1 \\ 0.5 \end{pmatrix}$$

$$\text{Fitness first cluster} = \frac{0.353 + 0.353}{2} = 1.916$$

$$1. \quad 2nd = \frac{3.98 + 4.98}{2} = 0.113$$

Shreyas Bhat Kera
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Q2

#

$$\epsilon = 0.2$$

$$\epsilon = \frac{x^{\max} - x^{\min}}{2^L - 1}$$

$$0.2 = \frac{5 - 0}{2^L - 1}$$

$$2^L - 1 = \frac{5}{0.2} = 25$$

$$2^L = 26$$

$$L = 5$$

for $[2.5, 4]$

$$x^* = x^{\min} + \epsilon x^{\max}$$

$$2.5 = 0 + 0.2 \times 12.5$$

$$x^* = 12.5 \approx 13$$

$$\text{binary} = 01011$$

$$4 = 0 + 0.2 \times 20$$

$$x^* = 16 = 10000$$

for $[1.2, 1]$

$$1.2 = 0 + 0.2 \times 6$$

$$= 6 = 00110$$

$$1 = 0 + 0.2 \times 5$$

$$= 5 = 00101$$

Population

1. 01011 10000 00110 00101