−: Question # 02 :−

solution:-

for 1st Iteration

$$PR(A) = 1 - d + d \left(\frac{PR(D)}{1} \right)$$

$$= 1 - 0.85 + 0.85 (1)$$

$$\boxed{PR(A) = 1}$$

$$PR(B) = 1 - d + d \left(\frac{PR(A)}{2} \right)$$

$$PR(B) = 1 - 0.85 + 0.85 \left(\frac{1}{2} \right)$$

$$\boxed{PR(B) = 0.575}$$

$$PR(C) = 1 - d + d \left(\frac{PR(B)}{2} \right)$$

$$\boxed{PR(C) = 0.575}$$

$$PR(D) = 1 - d + d \left(\frac{PR(A)}{2} + \frac{PR(B)}{2} + \frac{PR(E)}{1} \right)$$

$$= 1 - 0.85 + 0.85 \left(\frac{1}{2} + \frac{1}{2} + 1 \right)$$

$$\boxed{PR(D) = 1.85}$$

$$PR(E) = 1 - d + d \left(\frac{PR(C)}{1} \right)$$

$$PR(E) = 1 - 0.85 + 0.85 \left(\frac{1}{1}\right)$$

$$\boxed{PR(E) = 1}$$

For 2nd Iteration.

$$PR(A) = 1 - 0.85 + 0.85 \left(\frac{1.85}{1}\right)$$

$$\boxed{PR(A) = 1.722}$$

$$PR(B) = 1 - 0.85 + 0.85 \left(\frac{1}{2}\right)$$

$$\boxed{PR(B) = 0.875}$$

$$PR(c) = 1 - 0.85 + 0.85 \left(\frac{0.575}{2}\right)$$

$$\boxed{PR(c) = 0.394}$$

$$PR(D) = 1 - 0.85 + 0.85 \left(\frac{1}{2} + \frac{0.575}{2} + 1\right)$$

$$\boxed{PR(D) = 1.669}$$

$$PR(E) = 1 - 0.85 + 0.85 \left(\frac{0.575}{1}\right)$$

$$\boxed{PR(E) = 0.638}$$

For 3rd Iteration.

$$PR(A) = 1 - 0.85 + 0.85 \left(\frac{1.669}{1}\right)$$

$$\boxed{PR(A) = 1.568}$$

$$PR(B) = 1 - 0.85 + 0.85 \left(\frac{1.722}{2} \right)$$

$$\boxed{PR(B) = 0.881}$$

$$PR(c) = 1 - 0.85 + 0.85 \left(\frac{0.575}{2} \right)$$

$$\boxed{PR(c) = 0.394}$$

$$PR(D) = 1 - 0.85 + 0.85 \left(\frac{1.722}{2} + \frac{0.575}{2} + \frac{0.638}{1} \right)$$
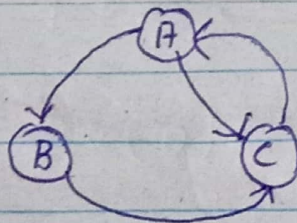
$$\boxed{PR(D) = 1.668}$$

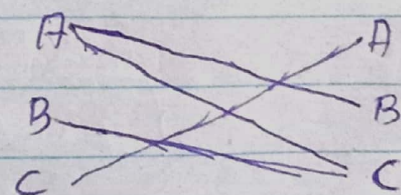$$PR(E) = 1 - 0.85 + 0.85 \left(\frac{0.394}{1} \right)$$

$$\boxed{PR(E) = 0.484} \quad Ans.$$

Question # 02:

soluton

producer

$$
\begin{array}{c}
\text{Consumer} \\
\begin{array}{c|ccc}
 & V_1 & V_2 & V_3 \\
\hline
V_1 & 0 & 1 & 1 \\
V_2 & 0 & 0 & 1 \\
V_3 & 1 & 0 & 0
\end{array}
\end{array}
$$

Producer — Producer Cosine similirities

$$Cosine\left(V_1, V_2\right) = 0$$
$$Cosine\left(V_1, V_3\right) = 0$$
$$Cosine\left(V_2, V_3\right) = 0$$

Ans.