1) ACCURACY

$$\frac{T(\text{purchased})+T(\text{not-Purchased})}{T(\text{Purchased})+T(\text{not-purchased})+F(\text{purchased})+F(\text{not-purchased})}$$

$$\frac{78+43}{78+7+43+6} = \frac{121}{134} = 0.90$$

2) RECALL % of not-purchased

$$\frac{T(\text{not-purchased})}{T(\text{not-purchased})+F(\text{not-purchased})}$$

$$\frac{78}{78+7} = \frac{78}{85} = 0.92$$

3) RECALL % of purchased

$$\frac{T(\text{purchased})}{T(\text{purchased})+F(\text{purchased})}$$

$$\frac{43}{43+6} = \frac{43}{49} = 0.88$$

4) PRECISION % of not-purchased

$$\frac{T(\text{not-purchased})}{T(\text{not-purchased})+F(\text{purchased})}$$

$$\frac{78}{78+6} = \frac{78}{84} = 0.93$$

5) PRECISION % of purchased

$$\frac{T(\text{purchased})}{T(\text{purchased})+F(\text{not-purchased})}$$

$$\frac{43}{43+7} = \frac{43}{50} = 0.86$$

6) F1-Measure % of not-purchased

$$2 * \frac{\text{Recall} * \text{Precision}}{\text{Recall} + \text{Precision}}$$

$$2 * \frac{0.92 * 0.93}{0.92+0.93} = 2 * \frac{0.85}{1.85} = 2 * 0.45 = 0.92$$

7) F1-Measure % of purchased

$$2 * \frac{\text{Recall} * \text{Precision}}{\text{Recall} + \text{Precision}}$$

$$2 * \frac{0.88 * 0.86}{0.88+0.86} = 2 * \frac{0.75}{1.74} = 2 * 0.431 = 0.87$$

8) MACRO AVERAGE OF PRECISION

$$\frac{\text{Precision(not-purchased)}+\text{precision(purchased)}}{2} = \frac{0.93 + 0.86}{2} = \frac{1.79}{2} = 0.89$$

9) MACRO AVERAGE OF RECALL

$$\frac{\text{Recall(not-purchased)}+\text{Recall(purchased)}}{2} = \frac{0.92 + 0.88}{2} = \frac{1.80}{2} = 0.90$$

10) MACRO AVERAGE OF F1-Measure

F1-Measure(not-purchased)+F1-Measure(purchased)

2

0.92 + 0.87 1.79

--- = ------- = 0.90

2 2

11)WEIGHTED AVERAGE OF PRECISION

precision(not-purchased)*(85/134)+precision(purchased)*(49/134)

85 49

0.93*---------- +0.86* ----- = 0.93*(0.66)+(0.86)*0.36 = 0.60+0.30 =0.90

134 134

12)WEIGHTED AVERAGE OF RECALL

Recall(not-purchased)*(85/134)+Recall(purchased)*(49/134)

85 49

0.92*---------- +0.88* ----- = 0.92*(0.66)+(0.88)*0.36 = 0.60+0.30 =0.90

134 134

13)WEIGHTED AVERAGE OF F1-Measure

F1-measure(not-purchased)*(85/134)+F1-measure(purchased)*(49/134)

$$0.92*\frac{85}{134} + 0.87*\frac{49}{134} = 0.92*(0.66)+(0.87)*0.36 = 0.60+0.30 = 0.90$$