

**1.22** In this case, every element of  $L_{kj} = 1 \forall j \neq k$ , and  $L_{kj} = 0 \forall j = k$ .

According to equation 1.81, we assign  $\mathbf{x}$  to the class  $j$  for which the following is minimized:

$$\sum_k p(C_k|\mathbf{x}) \mid k \neq j.$$

This is equivalent to maximizing:  $p(C_j|\mathbf{x})$  since the posterior probabilities sum up to 1.

The interpretation of this loss matrix is that all mis-classifications/mistakes are treated as equal.