**Solution**

**Personal Loan Acceptance**

**Q1)**

Using the k-NN on the partitioned datasets with k= 1 and cutoff =0.5, the customer is classified as belonging to the class ‘1’ which is - loan accepted.

**Q2)**

The value of kthat balances between overfitting (kbeing too small) and ignoring the predictor information (kbeing too large) is 3.

**Q3)**

The confusion matrix is formed in the R Notebook & HTML file.

**Q4)**

We obtain the same result as above, so we conclude that the above customer is classified as class ‘1’ - loan accepted.

**Q5)**

K= 3 minimizes the misclassification rate in the validation set. The accuracy of the model has somewhat reduced due to the new partition of training data.

**Note: For code, kindly check “code.rmd” file**