**Answers to qualitative questions**

**General instructions**

*Your responses should be coherent, clear and precise. Use of bullet points is acceptable.*

**Task 2.2**

*Discussion on whether the `contrast0` feature could help distinguish between the `dog\_bark` and `air\_conditioner` classes, with reasoning based on the data (100 words maximum).*

*<insert response here>*

**Task 4.4**

*Discussion on the following: Compare the accuracy from Task 3 (unscaled) and Task 4 (scaled), where KNN is applied to both unscaled and scaled data, resulting in different performance. In your own words, explain why feature scaling had such an impact on the KNN model's performance (100 words maximum).*

*<insert response here>*

**Task 4.5**

*Discussion on what KNN uses internally that makes it sensitive to the scale of the features (50 words maximum).*

*<insert response here>*

**Task 5.2**

*Compare the performance of the GaussianNB model with the KNN model using unscaled data. Which model performs better, and why? Provide justification for your answer (50 words maximum).*

*<insert response here>*

**Task 6.5**

*For the decision tree, explain why this particular feature was selected as the root node (100 words maximum).*

*<insert response here>*

**Task 7.3**

*Discuss the line plot of the support vector machine in performance accuracy and explain your observations (150 words maximum).*

*<insert response here>*

**Task 8.2**

*Briefly comment on what the confusion matrix reveals about your model’s strengths and weaknesses (150 words maximum).*

*<insert response here>*

**Task 8.4**

*Discuss in what situations F1-score is a more appropriate metric than accuracy (50 words maximum)?*

*<insert response here>*