Question 1

What is the optimal value of alpha for ridge and lasso regression? What will be the changes in the model if you choose double the value of alpha for both ridge and lasso? What will be the most important predictor variables after the change is implemented?

Ans: Optimal Value of alpha is 0.001 for lasso and 0.9 for ridge. After doubling alpha the predication remains very same and small changes in coefficient observed.

Question 2

You have determined the optimal value of lambda for ridge and lasso regression during the assignment. Now, which one will you choose to apply and why?

Ans: The optimum lambda value in case of Ridge and Lasso is as follows:- • Ridge – 0.9• Lasso – 0.001 ▪ After creating model in both Ridge and Lasso we can see that the r2_scores are almost same for both of them but as lasso will penalize more on the dataset and can also help in feature elemination i am goint to consider that as my final model

Question 3

After building the model, you realised that the five most important predictor variables in the lasso model are not available in the incoming data. You will now have to create another model excluding the five most important predictor variables. Which are the five most important predictor variables now?

1	LotArea	0.218326
46	YearRemodAdd_Old	0.198670
14	BsmtFinType2	0.168496
19	CentralAir	0.150738
17	TotalBsmtSF	0.136790

Question 4

How can you make sure that a model is robust and generalisable? What are the implications of the same for the accuracy of the model and why?

Ans: Regularization can be used to make the model simpler. Regularization helps to strike the delicate balance between keeping the model simple and not making it too naive to be of any use. For regression, regularization involves adding a regularization term to the cost that adds up the absolute values or the squares of the parameters of the model. Also, Making a model simple leads to Bias-Variance Trade-off: • A complex model will need to change for every little change in the dataset and hence is very unstable and extremely sensitive to any changes in the training data. • A simpler model that abstracts out some pattern followed by the data points given is unlikely to change wildly even if more points are added or removed.