1. From your analysis of the categorical variables from the dataset, what could you infer about their effect on the dependent variable? (3 marks)

1. Fall season has more bookings. All seasons, the booking is increased from 2018 to 2019.
2. Comparatively better bookings on May, June, July, August, September and October. I could see increasing tren from start and mid of the year and decreasing trend mid to end of the year
3. More bookings on clear weather
4. Towards Mid of the week to end of the week (Thursday to Sunday), bookings are increasing
5. Booking seems same both for non-working and working days
6. Bookings are increased overall in 2019

2. Why is it important to use drop\_first=True during dummy variable creation? (2 mark) 3. Looking at the pair-plot among the numerical variables, which one has the highest correlation with the target variable? (1 mark) 4. How did you validate the assumptions of Linear Regression after building the model on the training set? (3 marks) 5. Based on the final model, which are the top 3 features contributing significantly towards explaining the demand of the shared bikes? (2 marks) General Subjective Questions 1. Explain the linear regression algorithm in detail. (4 marks) 2. Explain the Anscombe’s quartet in detail. (3 marks) 3. What is Pearson’s R? (3 marks) 4. What is scaling? Why is scaling performed? What is the difference between normalized scaling and standardized scaling? (3 marks) 5. You might have observed that sometimes the value of VIF is infinite. Why does this happen? (3 marks) 6. What is a Q-Q plot? Explain the use and importance of a Q-Q plot in linear regression. (3 marks