\*\*Submit your quiz on GC only \*\*

**Quiz 5**

**Summer 2021**

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**ID \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. An appliance store has outlets in several cities in Punjab. The general sales manager plans to air a commercial for a digital camera on selected local TV stations prior to a sale starting on Saturday and ending Sunday. She plans to get information for Saturday-Sunday camera sales at various outlets and pair them with number of times the advertisement was shown on the local TV stations. The purpose is to find whether there is any relationship between number of times the advertisement was aired and the camera sales. (**15 marks)** 5 marks each

**Complete working will get full marks**

|  |  |  |
| --- | --- | --- |
| Location of  TV station | Number of Airings | Saturday-Sunday Sales  (Rs. thousands) |
| Lahore | 8 | 35 |
| Faisalabad | 2 | 8 |
| Multan | 5 | 21 |
| Rawalpindi | 7 | 24 |
| Sialkot | 3 | 17 |

1. What is the dependent variable?
2. Determine the coefficient of correlation.
3. Determine the least squares regression line?

2. The LSE entrance tests scores are based on a normal distribution with a mean of 1500 and a standard deviation of 300. LSE offers merit based scholarship to students who score in the top 15 percent of this test. What is the minimum score that qualifies for the scholarship? **(5 marks)**

3 . Dottie’s Tax Service specializes in federal tax returns for professional clients, such as physicians, dentists, accountants, and lawyers. A recent audit by the IRS of the returns she prepared indicated that an error was made on 7 percent of the returns she prepared last year. Assuming this rate continues into this year and she prepares 80 returns, what is the probability that she makes errors on: **(15 marks)** 5 marks each

1. More than six returns?
2. At least six returns?
3. Exactly six returns?

4. A financial advising company has determined that the price-to-earnings ratios for 20 randomly selected publicly traded companies range between 0.8 and 2.8. Given that the price-to-earnings ratios are uniformly distributed, answer the following questions. **2 marks each**

1. What is the average price-to-earnings ratio?
2. What is the standard deviation of the price-to-earnings ratio?
3. What percent of price-to-earnings ratios are equal to 2.58?
4. What percent of price-to-earnings ratios are between 1.89 and 2.50?
5. What percent of price-to-earnings ratios are between 1.30 and 2.45?
6. What percent of price-to-earnings ratios are less than 0.8?
7. What percent of price-to-earnings ratios are between .8 and 2.8?
8. What is the probability that a price-to-earnings ratio is less than 2.2?
9. What is the 3rd quartile of the distribution?
10. 75% of all price-to-earnings ratios are greater than