

- 4 a) A researcher is interested in comparing the prices of houses in four rural towns. She obtains the following data on three recent sales from each town and ranks the observations from lowest to highest. The ranks are presented in the table below:

calculated value of the Kruskal-Wallis test statistic ?

Town A	Town B	Town C	Town D
7	1	4	7
11.5	2	9.5	9.5
7	3	5	11.5

- b) 7 random people are given 3 different drugs and for each person the reaction time corresponding to the drugs were noted. Test the claim at the 5% significance level that all 3 drugs have same probability distribution (chi square for DF = 2 and 5% is 5.991) use friedman test ?

	Drug A	B	C
1	1.24	1.50	1.62
2	1.71	1.85	2.05
3	1.37	2.12	1.68
4	2.53	1.87	2.62
5	1.23	1.34	1.51
6	1.94	2.33	2.86
7	1.72	1.43	2.86

- 5 a) Find out what is the relation between salary of a group of people in an organization and the number of year of experience and age of employee ?

Salary	Age	Experience
26315	18	5
39493	20	7
37209	22	8
24380	23	6
25741	23	7
44629	25	5
37616	2	8
33305	28	6
42551	32	7
25700	37	9
37303	41	6
24659	46	7
32617	49	8
35771	53	6

- b) Answer the following:
- State Type 1 and Type 2 Error
 - One way v/s two way ANNOVA

- 6 a) i. Compare
- Binomial and Poisson Distribution
 - Box plot and Violin Plot
- b) i. State the concept of Boot strapping along with its key features?
- ii. In the context of multiple regression explain what is overfitting and multicollinearity?