

KANYASHREE UNIVERSITY

M.A./M.Sc. 2nd Semester Examination, 2024

Subject: Geography

Course - CC-211

Statistical Techniques

Full Marks-50

Time-04:00 Hours

[Answer **all** of the following]

(10×5=50)

1. The average weight of 52 kg with a standard deviation of 7 kg for PG Sem II girls is based on a sample of 29. Test the hypothesis at a 99% significance level that there is no significant difference between the sample mean and the population mean of 55 kg. **10**

2. From the following table

(a) find out the partial correlation coefficient between heaters sold and temperature.

(b) find out the partial correlation coefficient between heaters sold and advertisement cost.

(c) Show the combined effect of Temperature and advertisement cost on the number of heaters sold with the help of multiple correlation coefficient. **3+3+4=10**

Temperature (°C)	-5	-7	5	10	18	22	28	25	16	10	2	-3
Advertisement cost (in rupees)	100	100	95	90	50	45	45	50	75	80	95	100
Heaters sold	98	100	75	67	24	26	25	27	40	55	88	95

3. A study was conducted to determine the relationship between residential area and type of employment. The number of people employed in three sectors (agriculture, industry, services) was recorded in urban and rural areas in the following table.

Area	Agriculture	Industry	Service	Total
Urban	20	50	130	200
Rural	70	30	50	150
Total	90	80	180	350

With the help of Chi-square, test the association between residential area and type of employment. (The critical value of Chi-square at 5% level of significance for 2 degrees of freedom is 5.991). **10**

4. Answer the following questions using MS excel

5+5=10

a) Calculate Measures of central tendency using the climatic data.

Month	Average Temperature (°C)
January	15
February	19
March	26.8
April	30.4
May	30.7
June	30
July	28.4
August	29
September	29
October	21
November	19
December	17

b) The following table shows year wise population of Kolkata Municipal Corporation, prepare a Time Series graph with 3 yearly moving average method.

Year	Population in KMC
1901	848000
1911	896000
1921	1031000
1931	1141000
1941	2109000
1951	2698000
1961	2917000
1971	3149000
1981	3305006
1991	4400000
2001	4573000
2011	4487000

Group B

5. Lab Notebook and Viva-voce.

5+5=10
