KANYASHREE UNIVERSITY

M.A. / M.Sc. 2nd Semester Examination-2022

Subject: Geography

Course-CC 211

Statistical Techniques

Full Marks-50 **Time-2.00 Hours**

Group-A

[Answer **any four** of the followings] (5x4=20)

1. How to calculate weighted score – explain with an example.
2. What is the importance of Partial correlation and multiple correlation?
3. Discuss the Type-I and Type-II errors.
4. The average family income of a district is Rs. 1,20,000 per annum with standard deviation of Rs. 30,000. What is the probability of a family income per annum to be between Rs. 95,000 to Rs. 1,00,000? (Part of the SND table is given below)

Standard Normal Distribution: Table Values Represent AREA to the LEFT of the Z score.

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-0.9	0.18406	0.18141	0.17879	0.17619	0.17361	0.17106	0.16853	0.16602	0.16354	0.16109
-0.8	0.21186	0.20897	0.20611	0.20327	0.20045	0.19766	0.19489	0.19215	0.18943	0.18673
-0.7	0.24196	0.23885	0.23576	0.23270	0.22965	0.22663	0.22363	0.22065	0.21770	0.21476
-0.6	0.27425	0.27093	0.26763	0.26435	0.26109	0.25785	0.25463	0.25143	0.24825	0.24510
-0.5	0.30854	0.30503	0.30153	0.29806	0.29460	0.29116	0.28774	0.28434	0.28096	0.27760

5. Find out the z-scores for: (i) X = 6,50,000 and (ii) X = 6,60,000 where the mean is 6,78,800 and standard deviation is 1,10,000.
6. Highlight the salient features of Normal Distribution.
7. The score of two batters in consecutive innings are noted below. Calculate co-efficient of variation and comment on their consistency level. (Use MS Excel)

Innings No.	Score of Batter A	Score of Batter B
1	35	100
2	42	21
3	39	50
4	21	100
5	55	0
6	65	10
7	22	20
8	32	100
9	41	21
10	50	50

Group-B

[Answer **any two** of the followings] (10x2=20)

1. From the following table (i) find out the partial correlation coefficient between heaters sold and temperature (ii) find out the partial correlation coefficient between heaters sold and advertisement cost. (iii) Show the combined effect of temperature and advertisement cost on the number of heaters sold with the help of multiple correlation coefficient.

Temperature (^{0}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

2. To see the effectiveness of a vaccine against a Certain viral disease, 285 people were selected for the trial among 392 virus affected patients. The result is given below. With the help of χ^2, test the effectiveness of chloromycetin in checking typhoid. (The χ^2 at 5% level of significance for 1 degree of freedom is 3.841).

	Not recovered	**recovered**	**Total**
Vaccinated	35	250	285
Not- vaccinated	50	57	107
Total	85	307	392

3. In the table given below, three rows contain height of men above 20 years. compare the means between three groups of values with the One-way ANOVA test. (The F-crit value at 5% level of significance for $Df_{between}$ 2 and Df_{within} 21 is 3.4668).

US	180	183	172	178	169	179	178	180
UK	185	181	180	179	164	173	180	178
India	170	183	180	175	181	183	176	167

4. Using least square method prepare a regression analysis of the bi-variate data and fit a trend line. (Use MS Excel) (5+5)

Months	**Jan**	**Feb**	**March**	**Apr.**	**May**	**June**	**July**	**Aug.**	**Sep.**	**Oct.**	**Nov.**	**Dec.**
Rainfall (in mm)	60	57	58	62	68	120	310	290	160	80	70	50
Rainy Days	4	3	5	6	6	12	18	17	13	8	9	3

Group-C

1. Lab Note Book and Viva Voce. (5+5)

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