

2009**M.Sc.****2nd Semester Examination****REMOTE SENSING & GIS****PAPER—VIII (RG—1207 & 1208)***Full Marks : 40**Time : 2 Hours**The figures in the right-hand margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Write the answers of questions for each module in separate books.***Fundamental of Statistical Concepts and Geo-Statistics****RG—1207 (Full Marks : 20)**

Answer any two questions.

 $4 \times 2\frac{1}{2}$ **1. Write notes on any four of the following :**

- (a) Arithmetic Mean — merits and limitations.
- (b) Statistics — application in the field of Remote Sensing.
- (c) “Median is the ideal measures of Central Tendency” — Discuss.
- (d) Dispersion — Absolute and Relative measures.
- (e) Non-sampling error — any five causes.

(Turn Over)

2. Calculate the rank correlation coefficient between the variables X and Y from the following pairs of observed values :

X :	50	55	65	50	55	60	50	65	70	75
Y :	110	110	115	125	140	115	130	120	115	160

3. Average temperatures and rainfall distribution of a specific region are given below :

Temp.

in °C 20 22 23 24 27 28 29 30 31 32 33 34

Rainfall

in mm 03 14 30 23 131 34 260 330 320 325 45 110

- (a) Fit a straight line trend to these figures.
- (b) What would be the predicted rainfall when the temp. is 25°C ?
4. (a) Explain clearly the following terms in connection with testing of hypothesis (i) Critical region, (ii) First kind of error, (iii) second kind of error.
- (b) A random sample of size 20 from a normal population gives a sample mean of 42 and sample standard deviation of 6. Test the hypothesis that population mean is 44.

(Given that $t_{0.025} = 2.09$ and $t_{0.005} = 2.86$ for degrees of freedom 19).

Fundamental of Statistical Concepts and Geo-Statistics

RG—1208 (Full Marks : 20)

Answer any two questions.

1. What do you mean by biasness of scale in Statistics? State the limitation of 'Geostatistics'. What is 'Nearest Neighbour Index'? How this can help in distinguishing the distribution of points in an area? 2+3+4+1
2. What do you mean by 'Ranking' of a distribution? State the difference between Ranking & Standardization. Calculate the amount of Expected population of different police station of Nadia district on the basis of Ranking Method :

Sl. No.	Name of P.S.	Population
1.	Karimpur	9070
2.	Jagadanandpur	20470
3.	Khirdirpur	9075
4.	Krishnagarh	139070
5.	Nabadwip	115036
6.	Shantipur	20060

2+2+6

3. What do you mean by Locatal Quotient? Regionally if the value of L.Q. is low then what conclusion should be drawn? State the advantage of L. Q. in the context of inequality measurement. Explain with example the implicability of Z-score in data comparison. 2+2+6

4. State the importance of 'Lorenz Curve' ? Prepare a 'Lorenz Curve' on the basis of following data set :

State	Total Population	S. C. Population	S. T. Population
A. P.	43503	5775	1658
Assam	14958	911	1920
Bihar	56353	7951	4933
Gujrat	26697	1825	3734
Haryana	10037	1896	0
H. P.	3460	770	142
J & K	4617	381	0
Kerala	21347	1772	269
M. P.	41654	5454	8387

2+8