COURSE CODE: GEO 320
COURSE TITLE: QUANTITATIVE METHOD IN GEOGRAPHY
(BA/BED)

INSTRUCTIONS TO CANDIDATES

- Answer *Question One* and any other *Three Questions*.
- Maps, sketches and diagrams should be used whenever they serve to illustrate an answer
- The duration of this paper is 3 Hours

Question One

a) With specific illustrations distinguish the following class – intervals in frequency distribution:

(4 Marks)

i) Exclusive method;

ii) Inclusive method

b) In a settlement the close neighbour points in meters were recorded were recorded as shown;

57	44	80	75	18	45	37	14	04	64
72	51	69	34	22	83	70	20	57	28
96	56	50	47	10	34	61	66	80	46
22	10	84	50	47	73	42	33	48	65
10	34	66	53	75	90	58	46	39	69

Using an exclusive method of classification, prepare a frequency distribution table of class interval of 10 and use it to calculate the following:

(13 Marks)

i) Mean distribution of the data;

ii) The nearest neighbour index if the area covered by the points is given by 30 x 30 meters. Show by demonstration the type of type of settlement observed.

(8 Marks)

Question Two

a) With the help of a suitable diagram, discuss the construction of ANOVA table, what are the assumptions and uses of ANOVA as a statistical test.

(6 Marks)

b) To assess the significance of possible in variation in a certain test between the convent schools of a city, a common test was given to a number of students taken at random from the senior fifth class of each of the four schools concerned. The results are given below. Make an analysis of the data.

(9 Marks)

Sample I	8	10	12	8	7
Sample II	12	11	9	14	4
Sample III	18	12	16	6	8
Sample IV	13	9	12	16	15

Question Three

a) Explain the role of statistical methods in geographical studies.
(3 Marks)

b) Explain what you understand by the following:
(2 Marks)

  i)   Discrete variables;

  ii)   Continuous variable.

c) Briefly explain the level/scale of measurements and the relevant types of geographical data in each case. What are their characteristics?
(5 Marks)

d) What do you understand by the term "measures of variation"? Discuss two significances of measuring variation.
(5 Marks)

Question Four

a) What is a measure of central tendency? Discuss the properties of a good central measure, state the examples of central tendencies.
(7 Marks)

b) Explain the following concepts and state their uses:
(8 Marks)

  i)   Principal component analysis;

  ii)   Factor analysis

Question Five

a) With the concept of multiple correlations express the coefficients of $R_{1.23}$, $R_{2.13}$, and $R_{3.12}$.
(2 Marks)

b) The following zero order correlation coefficients are given; $r_{12} = 0.98$, $r_{13} = 0.44$ and $r_{23} = 0.54$ calculate multiple correlation coefficients treating first variable as dependent and the second and third variables as independent.
(2 Marks)

c) The association of accountants is investigating the relation between performances in the quantitative methods course, on the one hand and the hour studied per week and the general level of intelligence of candidates, on the other hand. The association has obtained the following data of ten students:

Students	Hours	I.Q	Examination Grade
	X_1	X_2	Y
1	9	99	56
2	6	100	45
3	12	119	80
4	14	95	73
5	11	110	71
6	6	117	55
7	19	98	95
8	16	101	86
9	3	100	34
10	9	115	66

Estimate the multiple regression equation.

(11 Marks)