



**JARAMOGI OGINGA ODINGA UNIVERSITY OF AGRICULTURE AND  
TECHNOLOGY**

**SCHOOL OF HUMANITIES AND SOCIAL SCIENCES**

**UNIVERSITY EXAMINATION FOR THE DEGREE OF BACHELOR OF EDUCATION  
(ARTS)**

**3<sup>rd</sup> YEAR 1<sup>st</sup> SEMESTER 2017/2018 ACADEMIC YEAR**

**MAIN CAMPUS**

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**COURSE CODE: NGE 301**

**COURSE TITLE: QUANTITATIVE METHODS**

**VENUE:**

**DATE:**

**EXAM SESSION:**

**TIME: 2 HOURS**

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**INSTRUCTIONS**

- 1. This paper consists of Five (5) questions.**
- 2. Answer question 1 (COMPULSORY) and any other Two questions.**
- 3. Write all answers in the answer booklet provided.**

1. a) Using illustrations discuss the function of the statistical methods in geographical studies (8 marks)
- b) i) What is the need of quantification in a geographical study? (4 marks)
- ii) State and explain any 4 limitations of application of quantitative methods (8 marks)
- c) Outline statistical procedure in conducting a statistical study (10 marks)
2. a) Discuss the structure and needs of specific measures of geographical investigation (10 marks)

b) Given values of geographic variables Y and X as follows

Y	7	8	9	8.9	9	10	14	15
X	3	4	5	5.3	6	7	8	9

- (i) Develop a model of relationship between Y and X (5 marks)
- (ii) Determine coefficient of determination and comment on it (5 marks)

3. The hypothetical criminal levels in town N, K, M and E are classified as petty, violent, robbery and murder respectively. A researcher on urban geography recorded a mixture of crime frequencies in a 5 randomly selected randomly selected year of several years as follows :

Town	Crime frequency				
N	20	100	30	70	80
K	30	40	29	41	100
M	50	67	43	72	90
E	60	49	80	39	51

Conduct an ANOVA test at 0.05 level of significance and give a comment on the crime occurrences in the sampled towns (20 marks)

4. a) State characteristics and purpose of a contingency table (5 marks)

b) The hypothetical data tabulated below show a record of random samples of arrivals and departure of tourist from a county K in a period of 6 months

Arrivals (in 1000s)	220.8	179.3	130	112	95	105
Departure( in 10000s)	98.4	100.6	127	90.2	73.1	115

Conduct a goodness of fit test regarding a population distribution at 0.05 level of significance (15 marks)

5. Discuss the characteristics of and application of any two probability distributions to specific geographic events (10 marks)

i) Suppose a study has shown that the probability of Boda boda –Taxi any part of Kenya is involved in a road accident is 0.3. Given a random sample of 100 Boda bodas are chosen in any part of Kenya. What is the probability that

(i) 5 or 8 will be in accidents (5 marks)

(ii) 0, 3 or 6 will be accidents (5 marks)