MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2018/2019 ACADEMIC YEAR

FOURTH YEAR SECOND SEMESTER

BACHELOR OF ARTS IN ECONOMICS
BACHELOR OF SCIENCE IN ECONOMICS AND STATISTICS

COURSE CODE: ECO 413/ECO 4103
COURSE TITLE: ECONOMETRICS II

INSTRUCTIONS TO CANDIDATES
Answer Question **ONE** and any other **THREE** questions

This paper consists of 3 printed pages. Please turn over.

QUESTION ONE (25 Marks)

i. Using MATRIX ALGEBRA prove the properties of OLS estimates.   **(8 Marks)**
ii. Results from a logit model is given as $\ln Z = 0.8 + 0.07X$, find the probability the event occurred when $X = 100$ **(5 Marks)**
iii. Explain possible uses of Analysis of variance **(4 Marks)**
iv. Explain why OLS method may not be an appropriate estimation method of estimation when the dependent variable is a binary dummy variable **(3 Marks)**
v. Explain the weaknesses of using indirect least square method **(2 Marks)**
vi. Explain the method of 2SLS and its merit **(3 Marks)**

QUESTION TWO (15 Marks)

To determine whether profitability of a firm is influenced by age of the manager, the following data was collected. If the envisaged model is:
PROFIT $= \alpha_1 + \alpha_2 AGE + \alpha_3 AGE^2 + \mu$

PROFIT	30	21	15	21	7	16	32	28	34	14

AGE	3 2	2 8	2 4	2 4	5 0	5 2	2 5	4 2	2 6	5 6

    i.   Find and interpret the relationship
   ii.   Compute and interpret the goodness - of – fit.

QUESTION THREE (15 MARKS)

To find how variable *P* and G affect another variable *Q* the following cross sectional data was collected:

Q	1	3	1 4	4	1 6	2 3	5	2 9	8	1 7	3	2	1 1	1 2	6	1 3
P	1 2	3 0	1 4	3 2	2 0	2 2	5 2	2 8	2 2	2 1	1 6	1 8	2 8	1 5	3 2	2 6
G	M	M	F	M	F	F	M	F	M	F	F	M	F	F	M	F

    i.   If G is a slope dummy, compute and interpret the coefficients

QUESTION FOUR (15 MARKS)

An urgent interested in selling cars believes that income is the only determinant of purchasing the same. Data from ten individuals from the firm reveal the following: (***where H represents those who have the policy and N otherwise***)

INCOME('000')	2 0	4 0	1 0	2 5	4 8	5	2	8	3 2	1 0
CAR	N	H	N	H	H	N	N	N	H	N

    i.   Justify the use of LPM as an estimation technique
   ii.   Using LPM show the chances of owning a house for one whose income is 3.

QUESTION FIVE (15 MARKS)

Three firms are supplying chicks. Since the health of the chicks is determined by weight, six were randomly chosen from each firm and were weighed (in grams).

FIRM 1	516	546	577	582	599	690
FIRM 2	546	612	627	645	660	713
FIRM 3	564	625	644	679	706	733

    i.   Show whether it may be advantageous to purchase from a particular firm.

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