THE CATHOLIC UNIVERSITY OF EASTERN AFRICA

A. M. E. C. E. A

P.O. Box 62157

00200 Nairobi - KENYA

Telephone: 891601-6

MAIN EXAMINATION

JANUARY – APRIL 2019 TRIMESTER

FACULTY OF ARTS AND SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

REGULAR PROGRAMME

ECN 208: BASIC ECONOMIC STATISTICS

Date: APRIL 2019	**Duration: 2 Hours**
INSTRUCTIONS: Answer Question ONE and any other TWO Questions	

Q1. a) The hourly wages for a sample of part-time employees at Home Depot are $12, $20, $16, $18 and $19.What is the sample variance? **(4marks)**

b) Differentiate between Descriptive statistics and Inferential statistics

(4marks)

c) A golfer has 12 golf shirts in his closet. Suppose 9 of these shirts are white and the others blue. He gets dressed in the dark, so he just grabs a shirt and puts it on. He plays golf two days in a row and does not do laundry. What is the likelihood both shirts selected are white? **(4marks)**

d) Explain the three approaches to assigning probabilities **(6marks)**

e) Differentiate between quantitative and qualitative variables giving two examples in each **(6marks)**

f) There are 12 automobile manufacturing companies in the United States. Listed below is the number of patents granted by the United States government to each company in a recent year. **(6marks)**

Q2. a)

Company	Number of patents granted
General motors	511
Nissan	385
Daimler	275
Toyota	257
Honda	249
Ford	234
Mazda	210
Chrysler	97
Porsche	50
Mitsubishi	36
Volvo	23
Bmw	13

Calculate the correlation coefficient for the following heights (inches) of fathers (X) and their sons (Y) interpret your results **(10marks)**

X: 65 66 67 68 69 70

Y: 67 68 65 72 72 69

b) Explain briefly the following types of data sets giving one example in each
   i) Time series data **(3marks)**
   ii) Cross-sectional data **(3marks)**
   iii) Panel data **(4marks)**

Q3. A sample of executives was surveyed about loyalty to their company. One of the questions was, 'If you were given an offer by another company equal to or slightly better than your present position, would you remain with the company or take the other position? The responses of the 200 executives in the survey were cross-classified with their length of service in the company.

	Length of service				
	Less than 1 year	1-5 years	6-10 years	more than 10 years	
Loyalty	B1	B2	B3	B4	Total
would remain,A1	10	30	5	75	120
Would not remain,A2	25	15	10	30	80
	35	45	15	105	200

Using a tree diagram answer the following questions;

i) What is the probability of randomly selecting an executive who is loyal to the company would remain) and who has more than 10years of service? **(5marks)**

ii) The probability of an executive remaining and has less than 1 year

(5marks)

iii) The probability that the executive would not remain and has 6-10years of service? **(5marks)**

iv) The probability that the executive would not remain and has more than 10 years of service **(5marks)**

Q4. a) Given the following data, calculate the covariance and the correlation coefficient **(10marks)**

Temperature (in degrees) (X)	Ice cream sales (Y)
66	8
72	11
77	15
84	20
83	21
71	11
65	8
70	10

b) Obtain the rank correlation coefficient for the following data. **(10 Marks)**

X	Y
68	62
64	58
65	68
50	45
64	81
80	60
75	68
40	48
55	50
64	70

Q5. Marks obtained by 10 students in Economics and statistics are given below

Marks in Econ: 25 28 35 32 31 36 29 38 34 32

Marks in Stats: 43 46 49 41 36 32 31 30 33 39

Find;

i) The regression equation of Y on X. **(10 Marks)**

ii) Estimate the marks in statistics when the mark in Economics is 30. **(10 Marks)**

END