MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
FIRST YEAR FIRST SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS
BACHELOR OF AGRIBUSINESS MANAGEMENT

COURSE CODE: AGB 2106

COURSE TITLE: BUSINESS STATISTICS

DATE: 5TH DECEMBER 2018 **TIME: 11.00 -1.00PM**

INSTRUCTIONS TO CANDIDATES

Answer Question **ONE** and any other **THREE** questions

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

1. QUESTION ONE (25 MARKS)

a) Explain the meaning of the word Population as applied to the study of statistics and differentiate it from a sample. (3 marks)

b) Differentiate between each of the following as applied to statistics:

i. Parameter and statistic (2 marks)
ii. Descriptive statistics and inferential statistics (2 marks)
iii. Estimate and Estimator (2 marks)
iv. Point Estimate and interval Estimate (2 marks)

c) Given the data below

28	35	29	36	48	57	67	69	58	71
48	24	42	21	37	51	72	63	33	62
71	32	34	38	37	64	51	54	56	31
37	76	38	61	59	58	44	39	57	46
38	34	45	47	38	44	47	47	48	22

i. Develop a frequency distribution table of six classes (2 marks)
ii. Construct an ogive (2 marks)

d) Give three main reasons why the use of sample is more widely applied than that of population in the study of statistics (3 marks

e) Give three qualities of a good Estimator (3 marks)

f) Differentiate between Chebyshevs rule and the Emperical rule as applied to the understanding of the Standard deviation (4 marks)

QUESTION TWO (15 MARKS)

a) Explain the term probability as applied to statistics (2 marks)

b) Differentiate between each of the following as applied to the study of probability

i. Mutually exclusive and collectively exclusive events. (2 marks)
ii. Dependent and independent events (2 marks)

c) In a statistics class there are 100 students. In an exam taken at the end of academic year, the scores they obtained were found to be normally distributed with a mean score of 50 marks and standard duration of 10 marks

Given that the university pass mark is 40, determine

i. The number of students who passed the exam (3 marks)
ii. The probability that at least a third of the students failed the exams (3 marks)
iii. The value of X if 20% of the students obtained a distinction by scoring a given mark X and above. (3 marks)

QUESTION THREE **(15 MARKS)**

Sare industries has five production employees in total. The hourly earnings of each employee is given as per the table below.

Employee	Hourly earnings
A	60
B	65
C	70
D	75
E	80

Required

a) Determine the population mean (2 marks)
b) Construct the sampling distribution of the means for sample of size 2 given sampling is done without replenishment (6 marks)
c) Find the mean of the sample means (2 marks)
d) Find the number of samples if sampling is done with replenishment (2 marks)
e) Determine the standard error (3 marks)

QUESTION FOUR **(15 MARKS)**

a) Explain what is meant by the term correlation in statistics (2 marks)

b) A sample of 10 families in Nairobi revealed the following for family size and the amount spent on food stuffs in Ksh.100, per month.

Family size (x)	Amount spent on food (y)
3	99
6	104
5	151
6	129
6	142
3	111
4	74
4	91
5	119
3	91

Required

i. Plot the information on a scatter diagram (3 marks)
ii. Compute the co-efficient of correlation (3 marks)
iii. Determine the coefficient of determination (1 marks)
iv. Determine the regression equation y on x (3 marks)
v. Determine the standard error of estimate (3 marks)

QUESTION FIVE **(15 MARKS)**

a) Give the steps necessary for the test of hypothesis (4 marks)

b) Using a flow chart differentiate between the use of a t-test and a z-test for the mean

(4marks)

c)A franchise investment company gives its average investment (in thousands) at Ksh. 143,260. You have some doubt and think this information is incorrect. You have decided to randomly select 30 franchises and to help you determine the necessary investment for each. Your sample mean investment is Ksh. 135,000 with a standard deviation of Ksh.30,000. Determine if there is enough evidence to support your claim at $\alpha = 0.05$

(7 marks)

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