MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2017/2018 ACADEMIC YEAR
FIRST YEAR SECOND SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS
BACHELOR OF SCIENCE IN ECONOMICS/FINANCIAL ECONOMICS/ECONOMICS AND STATISTICS

COURSE CODE: ECO 1205
COURSE TITLE: ECONOMICS STATISTICS II

DATE: 26TH APRIL, 2018 **TIME: 1100 – 1300 HRS**

INSTRUCTIONS TO CANDIDATES

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

*This paper consists of **TWO** printed pages. Please turn over.*

QUESTION ONE

(a) Explain the significance of statistics in business **(5marks)**

(b) Given the following

Y	6	8	8	7	7	12	9	8	9	10	10	11	9	10	11
X	9	10	8	7	10	4	5	5	6	8	7	4	9	5	8

i. Compute b_1 **(5marks)**

ii. Compute b_0 **(2marks)**

iii. Calculate coefficient of determination (R^2) **(5marks)**

(c) If the probability of hitting a target on a single shot is 0.3, what is the probability that in 4 shots the target will be hit at least four times? **(8marks)**

QUESTION TWO

(a) Discuss the limitations of statistics **(8marks)**

(b) What is the probability of less than 3 heads in 5 flips of a balanced coin **(7marks)**

QUESTION THREE

(a) Given a sample with a mean $\mu = 100$ and variance $\delta = 81$, and a random sample of n = 25 is obtained. What is the probability that the sample mean lies between 98 and 101? **(7marks)**

(b) Given a population with a mean of 400 and a variance of 16. If a sample of 35 is obtained.

i. What is the probability that sample mean will be more than 412. **(4marks)**

ii. What is the probability that sample mean will be less than or equal to 389 **(4marks)**

QUESTION FOUR

(a) Explain the conditions required to apply the binomial distribution **(7marks)**

(b) An electrical firm manufactures light bulbs that have a length of life that is normally distributed with mean equal to 800hrs and standard deviation of 40hrs. Find the probability that a bulb burns between 778 and 834 hrs: **(8marks)**

QUESTION FIVE

(a) Suppose that 50% of the plants in region 1 abide by the antipollution standards but only 40% of the 40 plants in region 2 do so. Is the percentage of the plants abiding by the antipollution standards significantly greater in region 1 as opposed to region 2 at 5% level of significance? **(8marks)**

(b) A large buyer of light bulbs wants to decide at 5% level of significance, which of the two equally priced brands to buy. To do this, he takes a random sample of 100 bulb of each brand and finds that brand 1 lasts 980hrs on average with a standard deviation of 80hrs. For brand 2, the average life is 1010hrs and the standard deviation of 120hrs. Which brand should the buyer purchase? **(7marks)**

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