



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR
FIRST YEAR FIRST SEMESTER**

**SCHOOL OF BUSINESS & ECONOMICS
DIPLOMA IN BUSINESS MANAGEMENT**

**COURSE CODE: DBM 04
COURSE TITLE: QUANTITATIVE SKILLS**

DATE: 18/4/2023

TIME: 0830-1030 HRS

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other THREE Questions.

QUESTION ONE

a) A lot of 25 bulbs contains 20% defective bulbs. A bulb is drawn at random from the lot. It is found to be not defective and it is not put back. Now, one bulb is drawn at random from the rest. What is the probability that the bulb is not defective **(4 Marks)**

b) State four importance of studying quantitative techniques **(4 Marks)**

c) The Graduate Management Aptitude Test is used by graduate schools of business as an entrance requirement. Making the assumption that the scores are normally distributed, the probabilities of achieving scores can be determined. In a recent year, the mean GMAT score was 494 and the standard deviation was about 100. What is the probability that a randomly selected score of the GMAT is between 600 and the mean? **(6 Marks)**

d. Explain the main stages of statistical inquiry **(7 Marks)**

e. State four characteristics of a normal distribution. **(4 Marks)**

QUESTION TWO

You are given the following sample data.

Score limits	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
Frequency	7	20	32	25	13	8	5	3

Compute the following measures of central tendency and measures of variation and dispersion:

- i. Mean **(3 Marks)**
- ii. Mode **(2 Marks)**
- iii. Median **(4 Marks)**
- iv. Variance **(4 Marks)**
- v. Standard deviation **(2 marks)**

QUESTION THREE

a. There are both random sampling methods and non-random sampling methods. Explain the four non-random sampling methods. **(8 Marks)**

b. i. Define sampling. **(2 Marks)**

ii) State five reasons why a person may choose sampling over census.

(5 Marks)

QUESTION FOUR

a. Find the correlation for the following data where X is the number of power black outs at night reported in a month and Y is the corresponding number of crimes reported in that month at Narok police station, using the rank correlation method. **(10 Marks)**

X	40	60	3	5	80	70	10	8	9	26
Y	50	72	10	14	87	74	80	4	3	16

b. What is correlation? Explain the various degrees of correlation. **(5 Marks)**

QUESTION FIVE

a) You are given the following scores: 23, 45, 55, 11, 22, 46, 44, 99, 44 and 77. Compute for the three measures of central tendency **(5 Marks)**

b) Suppose a state's department of labour wants to compare the cost of family food buying over the years. Department officials decide that instead of using a single food item to do this comparison, they will use a food basket that consists of five items: tomatoes, milk, bananas, potatoes and sugar. The information is shown below:

		Price	Price
Item	Quantity	1995	2008
Tomatoes	45	0.78	1.06
Milk	60	1.14	1.56
Bananas	12	0.36	0.49
Potatoes	55	0.28	0.36
Sugar	36	0.35	0.43

Using paasche price method, compute index for 1995 with 2008 as the base year. **(5 Marks)**

c) Briefly explain five uses of index numbers

(5 Marks)

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