



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

SECOND YEAR FIRST SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS

**BACHELOR OF COMMERCE/BSC.PROJECT
MGT/BSC.ENTREPRENEURSHIP**

COURSE CODE: BCM2107

COURSE TITLE: BUSINESS STATISTICS

DATE: 8TH APRIL, 2022

TIME: 1430-1630

INSTRUCTIONS:

Attempt Question One And Any Other Two Questions: Clear Examples, Calculations And Explanations Are Awarded

Do Not Write On The Exam Question Paper

SECTION A (COMPULSORY)

QUESTION ONE

a) ANNUAL SALARY AND TRAINING PROGRAM STATUS FOR A RANDOM SAMPLE OF 30 STIMA SACCO MANAGERS

Annual salary	Training	Annual salary	Training	Annual salary	Training
40,000	Yes	60,000	Yes	60,000	No
50,000	Yes	70,000	Yes	30,000	Yes
55,000	Yes	50,000	Yes	80,000	No
60,000	No	45,000	Yes	40,000	Yes
30,000	Yes	30,000	No	38,000	No
80,000	No	25,000	Yes	52,000	Yes
40,000	Yes	50,000	No	50,000	No
38,000	No	45,000	Yes	45,000	Yes
52,000	Yes	30,000	Yes	30,000	Yes
49,000	Yes	25,000	No	25,000	No

REQUIRED

- i. summarize the data in business statistics approach and explain what they mean to you. (HINT: measure of location, dispersion, skewness and kurtosis)
(15 MARKS)
- ii. practically discuss any two limitations in using statistics in requirement(i) above.

(5 MARKS)

SECTION B (ATTEMPT ANY TWO QUESTIONS)

QUESTION TWO

- a) Discuss any two probability sampling techniques and their advantages using an industry example.
(5 MARKS)
- b) Identify the letter of choice that completes the statement or answers the question (Multiple Choice, each carries 2 marks)
(10 MARKS)

- i. The sample statistics \bar{X} is the point estimator for
 - a. μ
 - b. S
 - c. σ
 - d. x

- ii. A sample statistic is an unbiased estimator of the population parameter if
 - a. The expected value of the sample statistics is equal to zero
 - b. The expected value of the sample statistic is equal to one
 - c. The expected value of the sample statistic is equal to the population parameter
 - d. It is equal to zero

- iii. Population characteristic, such as a population mean is called
 - a. A statistic
 - b. A parameter
 - c. A sample
 - d. The mean deviation

- iv. The fact that the sampling distribution of sample means can be approximated by a normal probability distribution whenever the sample size is large is based on the
 - a. Central limit theorem
 - b. Fact that we have tables of areas for the normal distribution
 - c. Assumption that the population has normal distribution
 - d. None of these alternatives are correct

- v. If $P(A) = 0.85$, $P(A \cup B) = 0.72$, and $P(A \cap B) = 0.66$, then $P(B) =$
 - a. 0.15
 - b. 0.53
 - c. 0.28
 - d. 0.15

- vi. The collection of all possible sample points in an experiment is
 - a. The sample space
 - b. A sample point
 - c. An experiment
 - d. The population

QUESTION THREE

- a) The following data relate to marks of student in a class.

Marks	No. of Students
0-10	2
10-20	7
20-30	21
30-40	25

40-50	30
50-60	35
60-70	28
70-80	12

Required

Calculate the following measurements, **(10marks)**

- i) Q_1
 - ii) Q_2
 - iii) Q_3
 - iv) 10^{th}
 - v) 90^{th}
- b) Comment and interpret on each of the results of i,ii,iii,iv & v above
(5 marks)

QUESTION FOUR

- a) Explain the following approaches of assigning probabilities **(6 marks)**
 - i. Classical probability
 - ii. Empirical probability
 - iii. Subjective probability
- b) The following data was observed and it is required to establish if there exists a relationship between the two.

X	15	24	25	30	35	40	45	65	70	75
Y	60	45	50	35	42	46	28	20	22	15

Required

- i) compute the product moment coefficient of correlation (r)
(9 marks)

////END////