



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR
YEAR III SEMESTER I**

**SCHOOL OF ARTS AND SOCIAL SCIENCES
BACHELOR OF SCIENCE**

**COURSE CODE:PSA 2220/STA 3125/SOC 2216
COURSE TITLE: SOCIAL STATISTICS IN
POLITICAL SCIENCE AND PUBLIC
ADMINISTRATION**

DATE: 14TH DEC 2018

TIME: 11-1PM

INSTRUCTIONS TO CANDIDATES

1. Answer Question **ONE** and any other **TWO** questions.
2. All Examination Rules Apply.

Question 1 (30 Marks)

a) Define the following terms as used in statistics

- i) Statistics (2mks)
- ii) Descriptive statistics (2mks)
- iii) Population (2mks)
- iv) Sample (2mks)
- v) Statistic (2mks)

b) The mean of the following distribution was found to be 1.46.

No. of accidents	0	1	2	3	4	5	
Frequency	46	m	y	25	10	5	Total =200days

- (i) Calculate the missing frequencies (4mks)
- (ii) The mean wage of 25 workers in a factory was recorded as ksh. 378.40. It was discovered that one observation was wrongly used in the computation as ksh. 160 instead of ksh. 200. Calculate the correct average weight/mean.

(3mks)

c) (i) Define the term measure of dispersion

(2mks)

(ii) State five properties of a good measure of dispersion

(5mks)

A country has 7 state universities in its system. The numbers of volumes (in thousands) held in their libraries are 83,510,33,256,401,47,23.

(iii) Is this a sample or a population?

(1mk)

(iv) Compute the standard deviation.

(2mks)

(v) Compute the coefficient of variation. Interpret

(3mks)

Question 2(20 Marks)

a) Consider the following data for the number of students and their marks.

marks	above	above	above	above	above	above	above	above	above	above	above
	0	10	20	30	40	50	60	70	80	90	100
students	80	77	72	65	55	43	28	16	10	8	0

- (i) Form a grouped frequency distribution (3mks)
- (ii) Calculate the modal value (3mks)
- (iii) Determine the values for median and quartile deviation (9mks)
- (iv) Determine the coefficient of quartile deviation (2mks)
- (v) Determine the second (2nd) decile and eight (8th) decile (3mks)

Question 3 (20Marks)

- a) (i) Define the term sampling distribution (2mks)
- (ii) The average price, μ of a 4 G.B flash disk is \$ 80.00 with a standard deviation, σ equal to \$ 10.00. What will be the mean and standard error from a sample of 20 flash disks? (4mks)
- (iii) State 3 properties of a normal curve. (3mks)
- The number of calories in a salad on the lunch menu is normally distributed with mean $\mu = 200$ and standard deviation $\sigma = 5$. Find the probability that the salad you select will contain.
- (iv) More than 208 calories. (2mks)
- (v) Exactly 200 calories. (2mks)
- (vi) Between 190 and 200 calories (3mks)
- b) A batch of 5000 electric lamps have a mean life of 1000 hrs and a standard deviation of 75hrs. Assuming a normal distribution.
- (i) How many lamps will fail before 900hrs? (2mks)
- (ii) How many lamps will fail between 950 and 1025hrs? (2mks)

Question 4 (20Marks)

- a) (i) Define the term inferential statistics (2mks)
(ii) Differentiate between hypothesis testing and estimation (4mks)
- b) Define the following terms as used in probability
- i) Sample space (2mks)
 - ii) Complementary events (2mks)
 - iii) Independent events (2mks)
 - iv) Mutually exclusive events (2mks)
- c) From a survey of 1000 people in a hotel, it was found that 500 people had tried a certain brand of coca-cola called diet coke, 600 had tried regular coke and 200 had tried both. A person is selected at random.
Determine the probability that he/she;
- (i) Has tried diet coke or regular coke (2mks)
 - (ii) Is a regular coke taker (2mks)
 - (iii) Neither regular nor a diet taker. (2mks)