MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR
SECOND YEAR SECOND SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS
BACHELOR OF COMMERCE/BSC.PROJECT MGT/BSC.ENTREPRENEURSHIP

COURSE CODE: BCM2107
COURSE TITLE: BUSINESS STATISTICS

DATE: 8TH DECEMBER, 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

QUESTION ONE

a) Discuss any two areas of application in statistics to a business organization **(4 MARKS)**

b) You are hired as a statistics consultant to analyze data for Safaricon limited on their share performance. Obtained data from Nairobi securities exchange on Safaricom share price fall and rise from a random sample of 20 price are as given below.

10,5,8,4,1,12,4,2,6,20,8.5,4.5,1,2,3,7,9,9,10,10s

Required

a. Find the sample mean from a grouped data. **(2 MARKS)**

b. Find the sample variance from a grouped data. **(4 MARKS)**

c. Find the standard deviation for the grouped data **(2 MARKS)**

d. Obtain 1^{st} ,2^{nd} and 3^{rd} quartiles **(5 MARKS)**

e. Explain the meaning of a,b & c above. **(3 MARKS)**

QUESTION TWO

a) Explain the following terms as used in basic probability theory
   i. Independent events
   ii. Compound event **(5 MARKS)**

b) A survey of 70 students was done in Elimika School, they were asked if they favoured a ban on wearing home clothes within the school compound. The results of the survey are shown in the table.

Class	Favour	Oppose
Grade 9	27	13
Grade 10	7	23

If a student was selected at random

Required

i. Find the probability that the subject is a Grade 9 or opposes the ban

ii. Find the probability that the subject is a Grade 10 or favor the ban

iii. Find the probability that the subject is a Grade 9, he or she favors the ban

(10 MARKS)

QUESTION THREE

a) There are 193 currently registered member countries in the united nations. Mr. Mbochi who is an expert of international internationalism at MMU, assigns a project in his international internationalism class. Students are randomly assigned two countries at random, and are asked to develop an idea for developing trade in goods or services between the randomly selected random countries.

Required.

i) In how many different ways can we randomly select two countries out of the 193 member nations of the U.N? (SHOW ALL CALCULATIONS) **(5 MARKS)**

ii) Explain the various levels of measurement in statistics **(4 MARKS)**

b) From the data below draw a stem and leaf diagram **(6 MARKS)**

35,24,49,42,30,13,10,30,15,16,13,19,18,12,11,1,2,3,10,5,8,4,1,12,42,6,20,8,4,1,1,2,3,7,9, 9,10,10.

QUESTION FOUR

a) In a sewing section of a factory making high fashion apparels, a score is assigned to every finished item on the basis of its quality (the higher the quality the better sthe score). Each tailor's pay is dependent upon the no. of items they finish. The no of items finished by each of the 12 tailors on a particular day and their mean quality score are shown below.

Tailor	**No. of items (X)**	**Mean quality score (Y)**
1	14	7.2
2	13	7.3
3	17	6.9
4	16	7.3
5	17	7.5
6	18	7.6
7	19	6.8
8	32	3.7
9	18	6.5
10	15	7.9
11	15	6.8
12	19	7.1

Required

i. Calculate the value of the product moment correlation coefficient between X and Y and interpret your value. **(8s MARKS)**

ii. Plot the data on a scatter diagram. Discuss briefly whether or not your interpretation in (i) should now be amended **(3 MARKS)**

iii. The prices of three kinds of food for 1995 & 1997 as well as quantities consumed are as follows

	1995	1997	quantity	
Milk	0.64	0.51	100	200
Bread	0.65	0.59	1000	900
Cakes	0.50	1	10	20

Required

iv. Compute the laspeyres index and explain the meaning. **(4 MARKS)**

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