ALUPE UNIVERSITY

OFFICE OF THE DEPUTY VICE CHANCELLOR

ACADEMICS, RESEARCH AND STUDENTS' AFFAIRS

UNIVERSITY EXAMINATIONS

2022 /2023 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER <u>REGULAR</u> EXAMINATION

FOR THE DEGREE OF BACHELOR OF BUSINESS

MANAGEMENT AND BACHELOR OF EDUCATION

BUSINESS STUDIES

COURSE CODE: IRD 101

COURSE TITLE: QUANTITATIVE SKILLS

DATE:5/12/2022   TIME: 9.00AM -12.00PM

<u>INSTRUCTION TO CANDIDATES</u>

- SEE INSIDETHIS PAPER CONSISTS OF 4 PRINTED PAGES
- PLEASE TURN OVER

INSTRUCTIONS TO CANDIDATES

i.   *Answer Question **ONE** and any other **TWO** questions.*

ii. *Maps and diagrams should be used whenever they serve to illustrate the answer.*

iii. *Do not write on the question paper.*

SECTION A: Answer ALL questions

Question one

a. Clearly define the following terms as used in statistics

    i. Statistics   (2 marks)

    ii. Variable   (2 marks)

    iii. Sample   (2 marks)

    iv. Harmonic mean   (4 marks)

b. The final grades in mathematics of 40 students in a state university examination are recorded in the accompanying table.

68	84	75	82	68	90	62	88
57	63	76	75	73	80	65	93
53	80	73	81	78	95	69	78
79	65	78	78	62	80	67	87
60	90	85	63	68	83	71	82

    i. Prepare the frequency distribution table, using the class interval of $50 - 54$, $55 - 59$, $60 - 64$, and so on.   (3 marks)

    ii. Obtain the midpoint, cumulative frequency, class boundaries, relative frequency and the cumulative relative frequency for each group.   (7 marks)

c. The following table shows the distribution of hours worked in a month by a number of employees of ABC Construction Company.

Hours	40-49	50-59	60-69	70-79	80-89	90-99	100-109	110-120
No of employees	4	12	18	11	7	5	2	1

    i. Find the standard deviation and variance.   (8 marks)

    ii. Determine the co-efficient of variation   (2 marks)

d. The distribution of scores students in an examination is given as:

Age (yrs0	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency	9	10	13	19	11	8	6	4

Find semi interquartile range for this data. (10 marks)

SECTION B: Answer ANY TWO questions

Question two

i. Sampling procedure is widely used among researchers compared to census. Clearly state the advantages of using sampling procedure. (5 marks)

ii. The following data relates to income levels and expenses of food in thousands of shillings.

Income	35	49	21	39	15	28	25
Food expenditure	9	15	7	11	5	8	9

Calculate the pearson correlation for the relationship between income and food expenditure and interpret your results (10 marks)

Question three

i. Explain any two sources of data (4 marks)

ii. Highlight any five problems a researcher is likely to face in data collection (5 marks)

iii. Discuss three methods of collecting a sample (6 marks)

Question four

i. Using relevant examples briefly discuss steps involved in statistical inquiry (7 marks)

ii. The table below gives the prices of a set of products sold in a particular supermarket.

Year	2008		2009	
Items	Price (Ksh.)	Quantity	Price (Ksh.)	Quantity
A	72	100	80	95
B	160	12	180	10
C	90	16	82	18
D	10	1100	12	1200

Calculate;

a) Laspeyer's price index   (4 Marks)

b) Paasche's price index   (4 Marks)

Question five

a) Two judges gave the following ranks to eight competitors in a beauty contest. Examine the relationship between their judgements.   (10 marks)

Judge A	4	5	1	2	3	6	7	8
Judge B	8	6	2	3	1	4	5	7

b) Explain the difference between regression and correlation analysis   (5 marks)