JARAMOGI OGINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS AND ECONOMICS

UNIVERSITY EXAMINATION FOR DEGREE OF BUSINESS

ADMINISTRATION WITH IT & BACHELOR OF EDUCATION ARTS WITH IT

2ND YEAR 2ND SEMESTER 2023/2024 ACADEMIC YEAR

MAIN CAMPUS

COURSE CODE: BAB 1202

COURSE TITLE: BUSINESS STATISTICS

EXAM VENUE: LAB II   **STREAM (BBA/BED)**

DATE: 24/04/2024   **EXAM SESSION: 9.00 – 11.00 AM**

TIME: 2.00 HOURS

INSTRUCTIONS

i.   Answer question ONE (COMPULSORY) and any other two questions

ii.   Candidates are advised not to write on the question paper

iii.   Candidates must hand in their answer booklet to the invigilator
        while in the examination

QUESTION ONE (30 MARKS)

(a) State any **FIVE** reasons as to why the sampling method is preferred to the census method.
(5 marks)

(b) Outline FIVE types of information likely to found at the state department of Trade and investment.
(5 marks)

(c) A manufacturing firm has provided you with the following data relating to wage amount and the respective number of employees.

Wages ($)	20-24	25-29	30-34	35-39	40-44	45-46
No. of employees	25	40	140	30	20	15

Required:

    i. The median value   (8 marks)
    ii. Modal   (6 marks)
    iii. Describe the nature of this distribution   (2 marks)

C) List any **four** limitations of index numbers   (4 marks)

QUESTION TWO (20 MARKS)

(a) Explain the meaning of Marginal probability.   (3 marks)

(b) JAKAPESA Enterprises runs a cereal store at city centre. The table below shows the average weekly sales pattern for Maize, Beans, wheat and rice sold at the store for years 2021 and 2022

Year	2021		2022	
Commodity	**Price**	**Quantity (Tones)**	**Price**	**Quantity (Tones)**
Maize	120	750	180	1000
Beans	250	1100	320	1600
Wheat	160	1800	200	2300
Rice	95	2400	130	2800

Required:
Using year 2021 as the base year, determine:
i. Laspeyre's quantity index   (5 marks)
ii. Paasche's Quantity Index   (5 marks)
iii. Fisher's Quantity Ideal Index   (3 marks)
c.) Outline four limitations of regression analysis   (4 marks)

QUESTION THREE (20 MARKS)

(a) Differentiate between Ratio and ordinal scales of measurement giving an example in each case
(4 marks)

(b) The Manager of Equity Bank, Bondo branch is interested in reducing the amount of time people spend while queuing to consult a personal banker. The bank is thus interested in the relationship between the queuing time (Y) in minutes and the number of personal bankers on duty (X). Customers were randomly selected and the following data was obtained:

X	Y
2	12.8
3	11.3
5	3.2
4	6.4
2	11.6
6	3.2
1	8.7
3	10.5
4	8.2
3	11.3
3	9.4
2	12.8
4	8.2
42	117.6

i. Fit the regression equation of the above data   (10 marks)
ii. The approximate minimum number of personal bankers who should be on duty each day if queuing time has to be at most 5 minute.   (2 marks)
iii) List four assumptions relevant to the regression line in (i) above   (4 marks)

QUESTION FOUR (20 MARKS)

a) University senate analyzed the results of 1000 students after the first year examinations. The result of the analysis is summarized below.

Examination result	Type of sponsorship			
	Government	Private	Church	Totals
Students who were to be discontinued	155	150	105	410
Students who passed the examination	180	195	170	545
Students who were to sit for a supplementary paper	20	5	20	45
Totals				**1000**

Required;

(i) The probability that a student was discontinued or was required to sit for a supplementary paper.
. (4 marks)

(ii) The probability that a student sat for a supplementary paper given that is church sponsored
. (4 marks)

(iii) The probability that a student is government sponsored. (2 marks)

b) Explain any five application areas of probability theory. (10 marks)

QUESTION FIVE

a) Discuss **four** ways in which Business statistics is applicable as a tool of management in devolution process in Kenya**.** (8 marks)

b) The data below relates to measurement on production of an electronic component in aviation industry.

   Required:

i).The actual mean score for the distribution using interpolation method (Take 54.5 as an assumed mean) (5 marks)

Classes	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency	6	8	8	18	10	7	4	2

ii) Coefficient of variation (7 marks)