FACULTY OF BUSINESS SCIENCES AND MANAGEMENT

DEPARTMENT OF MARKETING

BACHELOR OF COMMERCE HONOURS DEGREE IN MARKETING

FINAL EXAMINATION

BUSINESS RESEARCH METHODS [BMA 2204]

APRIL 2024

DURATION: 3 HOURS

INSTRUCTIONS

1. Answer any **two (2)** questions from **SECTION A** and any other **two (2**) questions from **SECTION B**
2. Begin each question on a new page.
3. Please indicate the study format (Conventional/Block) on the cover of your answer script.

INFORMATION

1. Marks per question are as indicated.
2. Questions may be attempted in any order.
3. This paper consists of two printed pages including the cover page

SECTION A

Answer any **two (2)** questions from this section

Question 1

a. Using examples outline any four (4) types of questions found in a questionnaire [8 MARKS]

b. Plagiarism is a serious academic offense which needs to be avoided'. Making use of examples discuss ways in which this can be managed [17 MARKS]

Question 2

a. Explain any five reasons for carrying out business research [10 MARKS]

b. Interviews are superior to questionnaires in data collection. Discuss this proposition in light of business research examples [15 MARKS

Question 3

Using relevant examples distinguish between:

Theoratical framework and conceptual framework	[5 MARKS]
Induction and deduction	[5 MARKS]
Quantitative and qualitative research	[5 MARKS]
Case study and surveys	[5 MARKS]
Background of the study and statement of the problem	[5 MARKS]

SECTION B:

Answer any **two (2)** questions from this section

Question 4

Gwanda State University (GSU) endeavoured to figure out the relationship between the number of monthly posted newspaper adverts and the number of applicants for undergraduate programmes per month. Data were collected for ten consecutive months and tabulated as follows:

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct
Newspaper Adverts	5	2	3	5	2	4	21	7	8	9
Number of Applications	50	25	29	53	50	65	70	70	85	90

Using the data above:

i. Calculate the regression equation of y on x, writing your answer in the form of $y= a+Bx$ (7)
ii. Estimate the number of applicants that will be obtained if six (6) newspaper adverts are placed (3)
iii. Calcuate Pearson Product Moment Correlation and comment (5)
iv. Calculate Covariance and comment (5)
v. Calculate Coefficient of determination and comment (5)

Question 5

A certain employer in Harare wanted to test for an association between the highest level of attained academic qualifications and employee performance. Data were collected and tabulated as follows:

Speed				
		Slow	Moderate	Fast
Highest	Bachelor's Degree	10	15	30
	Diploma	14	10	12
	Certificate	20	8	5

Test at 5%level of significance if there is an association between gender and employee speed. (25 marks**)**

Question 6

a. An English teacher at Mukosera High School carried out a contest to discover who would read the most number of books between boys and girls at the school during a three week period and the data is presented in the table below. Present the data in a stem and leaf diagram (5)

GIRLS	11	12	12	17	18	23	23	33	34	35	44	45	47	50	51	51	23
BOYS	15	18	22	22	23	26	34	35	40	40	42	47	49	50	50	51	43

b. The class marks obtained by students in a statistics tests are presented in a frequenty distribution table below:

Class mark	15-21	22-28	29-35	36-42	43-49	50-56
Frequency	2	2	6	22	11	7

From the table above calculate:

i. Median (4)
ii. Mode (4)
iii. Range (3)
iv. Variance (7)
v. Standard deviation (2)

END OF EXAMINATION PAPER

FORMULAES AND TABLES

Measures of central tendency ; grouped data

1. Median, $\boldsymbol{m} = lm + \frac{d}{Fm}(C)$

   Where, lm = lower class boundary

   d= difference between median number (n/2) and the items in the preceding class

   Fm= frequency of the median class

   C= class width or size

2. Mode, $Mo = lm + \frac{d1}{d1+d2}(C)$

   Where, d1= frequency of the modal class- frequency of the previous class

   d2= frequency of the modal class- frequency of the following class

   C= class width or size

3. Range =Upperlimit maximum interval – lower limit of minimum interval

Measures of dispersion ; grouped data

1. Variance, $s^2 = \frac{\sum f\ (xm - \bar{x})^2}{n-1}$

   where xm = midpoint of the class

2. Standard deviation, $s = \sqrt{\frac{\sum f\ (xm - \bar{x})^2}{n-1}}$

Measures of Association

1. Least squares regression equation, Y= a+Bx

   Where; $b = \frac{n\sum xy - \sum x \sum y}{n\sum x^2 - (\sum x)^2}$

   $a = \bar{y} - b\bar{x}$

2. Pearson Product moment correlation,

   $rxy = \frac{n\sum xy - \sum x \sum y}{\sqrt{\left[n\sum x^2 - (\sum x)^2\right]\left[n\sum y^2 - (\sum y)^2\right]}}$

3. Covariance, Cov = $\frac{\sum (x - \bar{x}) (y- \bar{y})}{n}$

4. Coeffecient of determination, R^2

$R^2 = b \frac{\sum (x - \bar{x}) (y- \bar{y})}{\sum (y- \bar{y})^2}$

Hypothesis testing, Chisquare, x^2 test

$X^2calc = \sum \frac{(O - E)^2}{E}$

Where, O= observed frequency

E= expected frequency

E= row total x coloumn total / Grand total

Calculation of degrees of freedom

Degrees of freedom = (r-1) (c-1)

Where; r = number of rows

C= number of coloumns

Chisquare distribution table

Degrees of freedom (*df*)	Significance level (α)							
	.99	.975	.95	.9	.1	.05	.025	.01
1	--------	0.001	0.004	0.016	2.706	3.841	5.024	6.635
2	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210
3	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345
4	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277
5	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086
6	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812
7	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475
8	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090
9	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666
10	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209
11	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725
12	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217
13	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688
14	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141
15	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578
16	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000
17	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409
18	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805
19	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191
20	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566
21	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932
22	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289
23	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638
24	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980
25	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314
26	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642
27	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963
28	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278
29	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588
30	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892
40	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691
50	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154
60	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379
70	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425
80	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329
100	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116
1000	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807