III Semester 5 Year B.B.A.LL.B./B.Com.LL.B.
Examination, March/April 2023 (December 2022)
BUSINESS STATISTICS

Duration : 3 Hours

Max. Marks : 80

Instructions : 1. Answer any five questions from group (a) each question carries 10 marks.
2. Answer any five questions from group (b) each question carries 06 marks.
3. Use simple calculator only.

Q. No. 1. a) What are the different sources of data collection ? Explain all the primary methods.   Marks : 10

Q. No. 1. b) Write a short note on scope of statistics.   Marks : 6

OR

Q. No. 1. a) Represent the following data by percentage bar diagram.   Marks : 10

Year	No. of Petrol cars	No. of Diesel cars
2013	50,000	30,000
2014	65,000	20,000
2015	45,000	25,000
2016	40,000	15,000
2017	70,000	10,000

Above table gives number of cars sold by a car manufacturing company in past five years.

Q. No. 1. b) Write a short note on tabulation.   Marks : 6

Q. No. 2. a) Calculate Mean, Median and Mode for the following data.   Marks : 10

Marks	No. of Students
More than 10	100
More than 20	92
More than 30	80

P.T.O.

6015/7015

More than 40	62
More than 50	40
More than 60	24
More than 70	14
More than 80	06
More than 90	00

Q. No. 2. b) Write a short note on Quartiles. Marks : 6

OR

Q. No. 2. a) Critically evaluate the importance of various measures of central tendency. Marks : 10

Q. No. 2. b) Find Harmonic mean. Marks : 6

X	f
124	5
129	18
134	20
139	7
144	3

Q. No. 3. a) The following table gives scores of two Students A and B in series of 8 exams. Marks : 10

Student A	Student B
32	10
28	80
46	20
60	75
70	65
55	15
40	17
45	70

Find which Student is more consistent.

Q. No. 3. b) Write a short note on Skewness.   Marks : 6

OR

Q. No. 3. a) Define dispersion. Explain various measures of dispersion.   Marks : 10

Q. No. 3. b) Calculate quartile deviation for the following data.   Marks : 6

Income	No. of Persons
50 – 70	100
70 – 90	140
90 – 110	300
110 – 130	230
130 – 150	125

Q. No. 4. a) Obtain lines of regression for the following data.   Marks : 10

X	y
5	13
7	14
9	16
1	18
3	11
4	10
2	17

Q. No. 4. b) Write a short note on Rank correlation.   Marks : 6

OR

Q. No. 4. a) Define correlation. Explain different types of correlation.   Marks : 10

Q. No. 4. b) Calculate Karl Pearson's coefficient of correlation for the following data.   Marks : 6

X	y
3	5
6	1
2	1
0	3

6015/7015

Q. No. 5. a) Calculate Fisher's index number and verify it satisfies Time Reversal Test (TRT) and Factor Reversal Test (FRT).　　Marks : 10

	Base Year		Current Year	
Commodities	Price	Quantity	Price	Quantity
A	4	20	5	24
B	5	15	3	24
C	2	30	5	35
D	1	50	2	60
E	3	25	4	30

Q. No. 5. b) Write a short note on 'weights in index number'.　　Marks : 6

OR

Q. No. 5. a) Define index number. Explain different steps involved in the construction of index number.　　Marks : 10

Q. No. 5. b) Construct cost of living index from the following data.　　Marks : 6

Group	Index	Weights
Food	55	40
Clothing	20	10
Fuel	15	20
Rent	10	20
Miscellaneous	18	10

III Semester 5 Year B.B.A.LL.B./B.Com.LL.B.
Examination, October/November 2022 (June 2022)
BUSINESS STATISTICS

Duration : 3 Hours

Max. Marks : 80

Instructions :
1. Answer all 5 questions.
2. One essay type and one short note or problem from each Unit have to be attempted.
3. Use simple calculator.

Q. No. 1. a) Draw 'less than ogive' and 'more than ogive' curves from the following data and also locate median value to verify the actual calculations.

Marks : 1×10=10

Class Interval	Frequency
10 – 50	10
50 – 100	30
100 – 150	50
150 – 200	40
200 – 250	20

OR

Q. No. 1. a) Discuss the scope, functions and limitations of statistics.   Marks : 1×10=10

Q. No. 1. b) Distinguish between primary data and secondary data.   Marks : 1×6=6

OR

Q. No. 1. b) Explain the methods of collection of primary data.   Marks : 1×6=6

Q. No. 2. a) From the following data, calculate Mean, Median and Mode.   Marks : 1×10=10

Weight (in kg)	No. of Students
58	4
60	12
61	24
62	32
63	32
64	16
65	8
66	2

OR

6015/7015

Q. No. 2. a) Find Mean, Median and Mode.   Marks : 1×10=10

Class	f
10 – 19	10
20 – 29	18
30 – 39	32
40 – 49	40
50 – 59	22
60 – 69	18

Q. No. 2. b) Find the Arithmetic mean from the following.   Marks : 1×6=6

Marks below	No. of Students
10	18
20	35
30	58
40	73
50	80
60	96
70	100

OR

Q. No. 2. b) Calculate first and third quartiles.   Marks : 1×6=6

Income	No. of Persons
250	20
300	14
325	6
350	26
375	9
400	13
600	4

Q. No. 3. a) An agent obtained samples of bulbs from two companies. He had tested them for durability and got the following results.   Marks : 1×10=10

Life (in Kms)	Type – A	Type – B
17 – 19	100	30
19 – 21	160	420
21 – 23	260	120
23 – 25	80	30

Which company's bulbs have more uniform life ?

OR

Q. No. 3. a) Which Series is more consistent?   Marks : 1×10=10

Variable	Series – A	Series – B
10 – 20	10	18
20 – 30	18	22
30 – 40	32	40
40 – 50	40	32
50 – 60	22	18
60 – 70	18	10

Q. No. 3. b) Find the median from the following.   Marks : 1×6=6

Marks below	No. of Students
10	18
20	35
30	58
40	73
50	80
60	96
70	100

OR

Q. No. 3. b) The mean and standard deviation of 2 brands of bulbs are given below.   Marks : 1×6=6

	Brand 'A'	Brand 'B'
Mean	1000 hrs.	820 hrs.
S.D.	100 hrs.	65 hrs.

Calculate co-efficient of variation for two brands and which brand is more consistent?

Q. No. 4. a) Calculate Karl Pearson's Co-efficient of correlation between Temperature and Germination time.   Marks : 1×10=10

Temperature	Germination time
57	10
42	26
40	30
38	41
42	29
45	27
42	27
44	19
40	18

Take 47 and 26 as assumed mean.

OR

Q. No. 4. a) Find Karl Pearson's co-efficient of skewness.   Marks : 1×10=10

x	f
20	8
25	11
30	19
35	25
40	21
45	18
50	6

Q. No. 4. b) Explain correlation and mention the properties of correlation. Marks : 1×6=6

OR

Q. No. 4. b) What is Regression ? Explain lines of Regression.   Marks : 1×6=6

Q. No. 5. a) Calculate Fisher's ideal index numbers and also show that it is satisfying Time Reversal Test (TRT) and Factor Reversal Test (FRT).   Marks : 1×10=10

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
Wheat	12	20	14	20
Rice	16	22	18	24
Gram	32	20	36	18
Pulses	29	8	29	12
Ghee	62	1	70	2
Sugar	14	5	16	4

OR

Q. No. 5. a) What is Index numbers ? Explain steps involved in computing Index numbers.   Marks : 1×10=10

Q. No. 5. b) Write a note on uses of Index number.   Marks : 1×6=6

OR

Q. No. 5. b) Write a note on consumer price index.   Marks : 1×6=6

Third Semester 5 Year B.B.A. LL.B./B.Com. LL.B.
Examination, April/May 2022 (Dec. 2021)
BUSINESS STATISTICS

Duration : 3 Hours   Max. Marks : 80

Instructions : 1. Answer all five Units.
2. One essay type question and short note/problems is compulsory from each Unit.
3. Figures to the right indicate marks.
4. Answer should be written in English completely.
5. Use simple calculator.

UNIT – 1

Q. No. 1. a) Draw less than and more than Ogives to the following frequency distribution and hence, locate the value of median.   Marks : 10

Classes	Frequency
10 – 20	03
20 – 30	08
30 – 40	14
40 – 50	25
50 – 60	15
60 – 70	07
70 – 80	02

OR

Q. No. 1. a) What is Primary Data ? Explain the methods of collecting primary data.   Marks : 10

Q. No. 1. b) The following table shows the cost structure of Indian Hotel Industry in percentages.   Marks : 6

Cost Components	Total Expenses %
Administrative	30
Employees payments	20
Repairs and maintenance	14
Food and beverages	12
Power	16
Selling expenses	08

Draw a pie diagram to represent the data.

OR

Q. No. 1. b) Write a short note on scope of statistics.   Marks : 6

P.T.O.

UNIT – 2

Q. No. 2. a) Calculate mean, median and mode for the following data.   Marks : 10

Class Intervals	Frequency
15 – 19	06
20 – 24	14
25 – 29	12
30 – 34	10
35 – 39	10
40 – 44	09
45 – 49	09
50 – 54	10
55 – 59	05
60 – 64	04
65 – 69	01

OR

Q. No. 2. a) Define Average. What are the functions and characteristics of good average ?   Marks : 10

Q. No. 2. b) Find quartiles from the following data.   Marks : 6

Age (Years)	No. of employees
Below 20	13
20 – 25	29
25 – 30	46
30 – 35	60
35 – 40	112
40 – 45	94
45 – 50	45
50 and above	21

OR

Q. No. 2. b) Write a short note on median.   Marks : 6

UNIT – 3

Q. No. 3. a) You are given below the daily wages paid to the workers in two factories X and Y.   Marks : 10

Daily Wages	Factory X Workers	Factory Y Workers
12 – 13	15	25
13 – 14	30	40
14 –15	44	60
15 – 16	60	35
16 – 17	30	12

17–18	14	15
18–19	07	05

Using appropriate measures to answer the following :

(I) Which factory pays higher average wages ?

(II) Which factory has more consistent wage structure ?

OR

Q. No. 3. a) Define dispersion. Explain the various measures of dispersion.   Marks : 10

Q. No. 3. b) Calculate Quartile Deviation and Coefficient of Quartile Deviation from the following data.   Marks : 6

Age (Years)	No. of teachers
50	10
51	12
52	15
53	10
54	14
55	18
56	06

OR

Q. No. 3. b) What is standard deviation ? Explain the merits and demerits of standard deviation.   Marks : 6

UNIT – 4

Q. No. 4. a) The following data relates to the age of X and Y.   Marks : 10

Age of X (Years)	Age of Y (Years)
25	20
28	26
30	29
32	30
35	25
36	18
38	26
39	35
42	35
45	46

(I) Obtain the two regression equations.

(II) Determine the most likely age of X when Y's age is 25 years. Also determine the most likely age of Y when X's age is 30 years.

OR

Q. No. 4. a) Explain Correlation analysis.   Marks : 10

Q. No. 4. b) From the marks obtained by 8 students in Accountancy and Statistics, compute rank correlation.   Marks : 6

Marks in Accountancy	Marks in Statistics
60	10
15	40
20	30
28	50
12	30
40	20
80	60
20	30

OR

Q. No. 4. b) Write a short note on Regression Analysis.   Marks : 6

UNIT – 5

Q. No. 5. a) Calculate Fisher's Ideal Index for the following data and verify that it satisfies TRT and FRT.   Marks : 10

	1999		2000	
Commodities	Price	Quantity	Price	Quantity
I	6	50	10	56
II	2	100	2	120
III	4	60	6	60
IV	10	30	12	24
V	8	40	12	36

OR

Q. No. 5. a) What is Index Number ? Explain the importance and steps in constructing the Index Number.   Marks : 10

Q. No. 5. b) Calculate index numbers from the following data by (I) Laspeyre's Price Index Number (II) Paasche's Price Index Number (III) Fisher's Price Index Number.   Marks : 6

Commodities	p_0	q_0	p_1	q_1
A	8	5	10	11
B	8.5	6	9	9
C	9	4	12	6

OR

Q. No. 5. b) Write a short note on Cost of living Index Number.   Marks : 6

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**III Semester 5 Years B.B.A. LL.B./B.Com. LL.B.
Examination, October/November 2021
BUSINESS STATISTICS**

Duration : 3 Hours

Max. Marks : 80

Instructions : 1. Answer any five questions from group (a) each question carries 10 marks.
2. Answer any five questions from group (b) each question carries 6 marks.
3. Answer should be written either in English or Kannada completely.
4. Use only simple calculator.

Q. No. 1. a) Define statistics. Explain the scope of statistics.   Marks : 10

Q. No. 1. b) Write a note on Tabulation.   Marks : 6

Q. No. 2. a) The following data relate to monthly expenditures of two families 'A' and 'B'.   Marks : 10

Items of Expenditure	Expenditure (in Rs.)	
	Family A	Family B
Food	160	100
Clothing	80	30
Rent	60	40
Fuel and Light	20	10
Miscellaneous	80	20
Total	400	200

Represent the data by a suitable percentage bar diagram.

Q. No. 2. b) Draw a Pie chart to represent the following data of the proposed expenditure by the Karnataka Government for the year ended 2020 – 2021.   Marks : 6

Items	Expenditure (Rs.)
Industries	400
Agriculture	600
Education	450
Irrigation	250
Miscellaneous	300

P.T.O.

Q. No. 3. a) Calculate Mean, Median and Mode for the following data.   Marks : 10

Marks	No. of Students
Less than 10	12
Less than 20	20
Less than 30	30
Less than 40	45
Less than 50	80
Less than 60	89
Less than 70	97
Less than 80	105
Less than 90	120

Q. No. 3. b) Calculate Geometric Mean from the following data.   Marks : 6

Weights (x)	No. of Persons (f)
135	3
145	6
147	4
157	6
167	3
182	5
198	4

Q. No. 4. a) Model marks for a group of 94 students are 54, 10 students got marks between 0 – 20, 30 students got between 40 – 60, and 14 students got between 80 – 100. Find the number of students getting marks between 20 – 40 and 60 – 80, if the maximum marks of the test were 100.   Marks : 10

Q. No. 4. b) Calculate Harmonic Mean from the following data.   Marks : 6

C – I	f
0 – 10	2
10 – 20	5
20 – 30	18
30 – 40	12
40 – 50	14
50 – 60	19
60 – 70	8
70 – 80	2

Q. No. 5. a) Compute Quartile Deviation and the co-efficient of Quartile Deviation from the following data.　　Marks : 10

Marks	No. of Students
10 – 19	12
20 – 29	17
30 – 39	5
40 – 49	10
50 – 59	6
60 – 69	20
70 – 79	15
80 – 89	13

Q. No. 5. b) Calculate standard Deviation from the following data.　　Marks : 6

X
20
30
40
50
55
60
70

Q. No. 6. a) A Panel of 2 Judges. Mr. A and Mr. B graded seven Dance performances by awarding marks as follows.　　Marks : 10

Performances	1	2	3	4	5	6	7
Judge A	46	42	44	40	43	41	45
Judge B	40	38	36	35	39	37	41

Find out the co-efficient of variation in the marks awarded and find out who is more consistent.

Q. No. 6. b) Write a note on Skewness.　　Marks : 6

Q. No. 7. a) Calculate Karl Pearson's co-efficient of correlation from the following.　　Marks : 10

X	Y
249	237
251	238
248	236
252	240
258	245
269	255
271	254
272	252
280	258
275	251

Q. No. 7. b) Write a note on Rank correlation. Marks : 6

Q. No. 8. a) Given are the bi-variate data, obtain the two regression equation and calculate X on Y when Y = 14 and Y on X when X = 18. Marks : 10

X	Y
3	7
6	2
5	1
3	2
2	6
8	5
4	3
2	8

Q. No. 8. b) From the following, calculate Spearman's rank correlation. Marks : 6

Marks in Statistics	96	54	52	78	45	68	34	99	53	74
Marks in Science	34	78	45	92	69	90	84	14	74	97

Q. No. 9. a) Price and quantities of the base year and the current year for eight groups of commodities are given below. Marks : 10

Commodities	Price		Quantity	
	Base Year	Current Year	Base Year	Current Year
A	14	15	55	80
B	10	12	100	90
C	16	18	60	70
D	18	20	30	40
E	20	22	40	40
F	12	14	70	60
G	09	11	90	80
H	08	13	80	75

Calculate Fisher's ideal index number and verify both TRT and FRT tests.

Q. No. 9. b) Write a note on Index Number. Marks : 6

Q. No. 10. a) Explain TRT and FRT. Marks : 10

Q. No. 10. b) Write a note on cost of living index number. Marks : 6

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III Semester 5 Yr. B.B.A. LL.B. Examination, March/April 2021
BUSINESS STATISTICS

Duration : 3 Hours   Max. Marks : 80

Instructions : 1. Answer any five questions from group (a) each
question carries 10 marks.

2. Answer any five questions from group (b) each
question carries 06 marks.

3. Answers should be written only in English.

Q. No. 1. a) Explain all the primary methods of data collection.   Marks : 10

Q. No. 1. b) Represent the following distribution of marks by frequency
polygon.   Marks : 6

Percentage of Marks	No. of Students
0 – 10	01
10 – 20	05
20 – 30	07
30 – 40	09
40 – 50	50
50 – 60	35
60 – 70	25
70 – 80	10

Q. No. 2. a) Represent the following data by percentage bar diagram.   Marks : 10

Number of students

College	Arts	Science	Commerce	Total
A	900	960	1140	3000
B	750	600	650	2000

Q. No. 2. b) Write short note on Tabulation.   Marks : 6

Q. No. 3. a) Calculate mean, median and mode for following data. Marks : 10

Marks	No. of Students
Less than 10	12
Less than 20	30
Less than 30	50
Less than 40	80
Less than 50	96
Less than 60	110
Less than 70	116
Less than 80	120

Q. No. 3. b) Find Harmonic mean. Marks : 6

X :	12	16	20	24	28	32	36	40
f :	10	13	15	20	25	32	28	22

Q. No. 4. a) Explain mathematical properties of Arithmetic mean with its merits and demerits. Marks : 10

Q. No. 4. b) Write a short note on quartiles. Marks : 6

Q. No. 5. a) A purchasing agent obtained samples of lamps from two suppliers. Find which company's lamps are more uniform. Marks : 10

Length of life in hours	Company A	Company B
700-900	10	3
900-1100	16	42
1100-1300	26	12
1300-1500	8	3

Q. No. 5. b) Calculate Bowley's co-efficient of skewness. Marks : 6

No. of children per family	No. of families
0	7
1	10
2	16
3	25
4	18
5	11
6	8

Q. No. 6. a) Define dispersion. Explain various measures of dispersion.   Marks : 10

Q. No. 6. b) Define range. What are the merits of range ?   Marks : 6

Q. No. 7. a) Define correlation. Explain different measures of correlation. Marks : 10

Q. No. 7. b) Write a note on rank correlation.   Marks : 6

Q. No. 8. a) Calculate the regression equations for the following data :   Marks : 10

X:	1	2	3	4	5
Y:	2	3	5	4	6

Q. No. 8 b) Calculate co-efficient of correlation from the following data :   Marks : 6

X:	8	7	6	5	4	3	2
Y:	19	17	15	13	11	7	9

Q. No. 9. a) Calculate Fisher's Index number and show that it satisfies TRT and FRT.   Marks : 10

Item	Base Year Price (Rs.)	Base Year Expenditure (Rs.)	Current Year Price (Rs.)	Current Year Expenditure (Rs.)
A	6	300	10	560
B	2	200	2	240
C	4	240	6	360
D	8	320	12	432

Q. No. 9. b) Write a note on applications of Index number.   Marks : 6

Q. No. 10. a) Explain types of index numbers.   Marks : 10

Q. No. 10. b) Construct cost of living index for 2009 from the given data taking 2005 as the base period.   Marks : 6

Group	Group Index for 2009	Weights (2009)
Food	122	32
House rent	140	15
Cloth	112	18
Fuel	116	10
Miscellaneous	106	25