Third Semester 5 Year B.B.A., LL.B./B.Com. LL.B. Examination, January/February 2025 (Odd Sem.)
BUSINESS STATISTICS

Duration : 3 Hours   Max. Marks : 80

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

UNIT – 1

Q. No. 1. (a) Prepare a frequency distribution for the following
observation by constructing a class interval of 10 and
draw a histogram.   Marks : 10

16	12	30	29	22	35	39	40	42	40
50	30	18	12	5	15	3	4	9	45
9	0	5	6	8	15	25	22	3	4
8	12	5	9	3	4	30	32	29	1

OR

(a) Define statistics. Explain the scope and limitation of
statistics.   Marks : 10

Q. No. 1. (b) Prepare a blank table to show the distribution of students
of a college according to :   Marks : 6

I) Faculty : Arts, Commerce and Science

II) Gender : Male and Female

III) Year : 2009 and 2010

                     OR

(b) Distinguish between Primary and Secondary data.   Marks : 6

UNIT – 2

Q. No. 2. (a) The following table shows the age distribution of persons in a particular region. Calculate Mean, Median and Mode from the following data.   Marks : 10

Age (years)	No. of Persons
Below 10	02
Below 20	05
Below 30	09
Below 40	12
Below 50	14
Below 60	15
Below 70	19

OR

(a) Explain the various measures of central tendency.   Marks : 10

Q. No. 2. (b) Calculate the missing frequency (number of students) against the class 30 – 40 of the following data, where $\bar{X} = 28$. Marks : 6

Marks	No. of Students
0 – 10	12
10 – 20	18
20 – 30	27
30 – 40	—
40 – 50	17
50 – 60	06

OR

(b) Explain the merits and demerits of mean.   Marks : 6

UNIT – 3

Q. No. 3. (a) Following are the scores of two batsmen, Sachin and Sidhu in a series of innings.   Marks : 10

Sachin	Sidhu
12	47
115	12
06	76
73	42
07	04
19	51
119	37
36	48
84	13
29	0

Find out :

1) Who is better scorer ?

2) Who is more consistent ?

OR

(a) Define dispersion. Explain the various measures of dispersion. Marks : 10

Q. No. 3. (b) Calculate Karl Pearson's coefficient of skewness from the following data.   Marks : 6

Value	Frequency
6	4
12	7
18	9
24	18
30	15
36	10
42	5

OR

(b) What is Quartile Deviation ? Explain its merits and demerits.   Marks : 6

UNIT – 4

Q. No. 4. (a) 10 Competitions in a beauty contest were ranked by 3 judges in the following.　　　　　　　　Marks : 10

Judge 1	Judge 2	Judge 3
1	3	6
6	5	4
5	8	9
10	4	8
3	7	1
2	10	2
4	2	3
9	1	10
7	6	5
8	9	7

Use rank correlation coefficient to determine which pair of judges have the nearest approach to common taste in beauty.

OR

(a) Define correlation. Explain the kinds of correlation.　　Marks : 10

Q. No. 4. (b) Estimate the 2 regression equations using the following data.　　　　　　　　Marks : 6

	X	Y
Mean	25	30
Standard deviation	05	4

and r = 0.8

Estimate the value of X when Y = 20.

OR

(b) Difference between correlation and regression.　　Marks : 6

UNIT – 5

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

Commodities	2002		2003	
	Price	Expenditure	Price	Expenditure
A	8	80	10	120
B	10	120	12	96
C	05	40	05	50
D	04	56	03	60
E	20	100	25	150

OR

(a) What is Index Number ? Explain the importance and limitations of Index Number.   Marks : 10

Q. No. 5. (b) Compute Consumer Price Index Number by using the following information.   Marks : 6

	Group Index		
Items	2008	2012	Group Weight
Food	140	210	33
Clothing	220	300	10
Fuel	125	140	05
Housing	150	200	12
Others	135	160	11

OR

(b) Explain the types of Index Number.   Marks : 6

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**III Semester 5 Years B.Com.,LL.B./B.B.A.,LL.B. (Even Sem.)
Examination, August/September 2024
BUSINESS STATISTICS**

Duration : 3 Hours   Max. Marks : 80

Instructions : 1. Figures to the right indicate marks.

2. Answer should be written in English completely.

3. Use simple calculator only.

UNIT – 1

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

OR

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

Items	Family A	Family B
	Income Rs. 4,500 per month	Income Rs. 3,500 per month
Food	1,300	1,200
Clothing	800	700
Rent	700	500
Education	300	350
Electricity	400	100
Miscellaneous	600	250
	4,100	3,100

P.T.O.

Q. No. 1. b) Explain the limitations of statistics. Marks : 6

OR

Q. No. 1. b) Present the following business statistics results of 2nd
B.Com.LL.B. held during December 2016, 2017 and 2018
by means of multiple bars. Marks : 6

Year	1st Class	2nd Class	3rd Class	Failed
Dec. 2016	100	300	400	280
Dec. 2017	120	400	700	300
Dec. 2018	100	500	600	200

UNIT – 2

Q. No. 2. a) Find the geometric mean and harmonic mean from the
following distribution. Marks : 10

Marks	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
No. of Students	7	12	4	25	30	22

OR

Q. No. 2. a) From the following data calculate mean, median and mode.

Marks : 10

Wages (in Rupees)	No. of Workers
Above 0	80
Above 10	77
Above 20	72
Above 30	65
Above 40	55
Above 50	43
Above 60	28
Above 70	16
Above 80	10
Above 90	8
Above 100	0

Q. No. 2. b) Explain the various measures of central tendency.

Marks : 6

OR

Q. No. 2. b) The mean weight of 100 students in a class is 60 kgs.

The mean weight of boys in the class is 65 kgs. and that of

girls is 55 kgs. Find the number of boys and girls in

the class.

Marks : 6

UNIT – 3

Q. No. 3. a) Following are the runs scored by batsmen in a cricket match. Find the mean deviation and coefficient of mean deviation from mean and median. Marks : 10

Runs scored	No. of matches
5	16
10	32
15	36
20	44
25	28
30	18
35	12
40	14

OR

Q. No. 3. a) The scores of two batsmen A and B in ten cricket matches is given below. Marks : 10

A	B
63	53
71	19
39	31
10	48
96	10
60	90
14	67
32	62
28	40
48	80

Using coefficient of variation, find whether batsmen A or B is more consistent in scoring.

Q. No. 3. b) You are given $\overline{X}$ = 50, C.V. = 40% and coefficient of skewness = −0.4. You are required to find out standard deviation, mode and median.   **Marks : 6**

OR

Q. No. 3. b) Write a note on skewness.   **Marks : 6**

UNIT – 4

Q. No. 4. a) Calculate correlation coefficient for the following X and Y series :   **Marks : 10**

X	Y
45	56
55	50
56	48
58	60
60	62
65	64
68	65
70	70
75	74
80	82

OR

Q. No. 4. a) From the following data, obtain the two regression equations.   **Marks : 10**

X	1	5	3	2	1	2	7	3
Y	6	1	0	0	1	2	1	5

Q. No. 4. b) Write a note on Spearman's coefficient of rank correlation.   **Marks : 6**

OR

Q. No. 4. b) Obtain the regression equations from the following :   **Marks : 6**

	X Series	Y Series
Mean	20	25
Variance	4	9

Coefficient of correlation = 0.75.

UNIT – 5

Q. No. 5. a) Using the data given below, calculate price index number
for the year 2018 by

 (i) Laspeyre's formula

 (ii) Paasche's formula and

 (iii) Fisher's formula with the year 2009 as base.   Marks : 10

Commodity	Price (Rs.)		Quantity (kg.)	
	2009	2018	2009	2018
Rice	90	110	100	130
Wheat	64	85	50	68
Pulses	59	90	70	74
Sugar	48	60	62	83
Ragi	60	65	95	45
Jowar	40	45	08	15
Onion	20	15	20	19
Toor dal	30	29	25	28
Moong dal	42	45	42	38
Soybean	41	80	18	29

OR

Q. No. 5. a) An enquiry into the budgets of the middle class families in
Mumbai gave the following information.   Marks : 10

Expenses on	Weights (in %)	Price (Rs.)	
		2002	2013
Food	20	300	500
Rent	10	100	200
Clothing	5	40	300
Fuel	3	120	80
Electricity	8	95	220
Vegetables	12	40	98
Refreshments	12	85	100
Miscellaneous expenses	30	500	600

What changes in the cost of living index of 2013 has taken
place as compared to 2002 ?

Q. No. 5. b) Construct Fisher's index for the following data and verify whether it satisfies TRT and FRT.   Marks : 6

Commodity	Base Year		Current Year	
	Price	Quantity	Price	Quantity
A	12	100	20	112
B	14	120	14	240
C	08	80	12	120
D	20	60	24	40
E	16	120	24	48
F	15	40	30	52

OR

Q. No. 5. b) What is index number ? Explain the advantages of index number.   Marks : 6

III Semester 5 Yr. B.B.A.,LL.B./B.Com.,LL.B. Examination, March/April 2024
(Odd Sem.)
BUSINESS STATISTICS

Duration : 3 Hours   Max. Marks : 80

Instructions : 1. Answer all five Units.
2. One essay type question and short note question
   or problems is compulsory from each Unit.
3. Use simple calculator only.
4. Answer should be written in English completely.

UNIT – I

Q. No. 1. a) Draw a percentage bar diagram for the following data :   Marks : 10

Expenditure	Company A Rs.	Company B Rs.
Materials	3,00,000	4,00,000
Wages	50,000	60,000
Power	1,00,000	1,30,000
Maintenance	20,000	30,000
Total	**4,70,000**	**6,20,000**

OR

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

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

OR

Q. No. 1. b) Mention the components of a good table.   Marks : 6

P.T.O.

UNIT – II

Q. No. 2. a) Explain the various measures of central tendency.   Marks : 10

OR

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

Marks	No. of students
Less than 10	15
Less than 20	35
Less than 30	64
Less than 40	84
Less than 50	96
Less than 60	120
Less than 70	192
Less than 80	256

Q. No. 2. b) Calculate geometric mean from the following data :   Marks : 6

Classes	f
0 – 10	5
10 – 20	7
20 – 30	15
30 – 40	25
40 – 50	8

OR

Q. No. 2. b) Find the harmonic mean from the data :   Marks : 6

Marks	No. of Students
15 – 25	4
25 – 35	11
35 – 45	19
45 – 55	14
55 – 65	6
65 – 75	2

UNIT – III

Q. No. 3. a) The scores of 2 batsman A and B inning during a certain season are given below. Marks : 10

Mr. A	58	59	60	54	65	66	52	75	69	62
Mr. B	87	89	78	71	73	84	65	66	56	46

Use appropriate measure and answer the following :
(i) Who is the better scorer ?
(ii) Who is more consistent ?

OR

Q. No. 3. a) Find the quartile deviation and its co-efficient. Marks : 10

Weekly wages	Number of workers
250 – 300	5
300 – 350	13
350 – 400	22
400 – 450	44
450 – 500	36
500 – 550	24
550 – 600	16

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

OR

Q. No. 3. b) Calculate mean deviation about the median for the following data : Marks : 6

x	f
10	3
11	12
13	12
14	3
12	18

UNIT – IV

Q. No. 4. a) Ten competitors in a beauty contest are ranked by 3 judges in the following order : Marks : 10

1st Judge	2	7	1	5	3	4	8	6	10	9
2nd Judge	10	6	3	8	7	2	9	5	4	1
3rd Judge	2	5	6	9	1	3	7	4	8	10

Use rank correlation coefficient to determine which pair of Judge has the nearest approach to common taste in a beauty.

OR

Q. No. 4. a) Define regression. Explain the linear and non-linear regression and lines of regression. Marks : 10

Q. No. 4. b) Compute the regression equation for the following data :   Marks : 6

X	10	12	13	17	18	20	24	30
Y	5	6	7	9	13	15	20	21

OR

Q. No. 4. b) Distinguish between correlation and regression.   Marks : 6

UNIT – V

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

OR

Q. No. 5. a) Calculate Fisher's ideal index from the following data and show how it satisfies time reversal test and factors reversal test.   Marks : 10

Commodities	Base Year		Current Year	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
A	10	100	12	96
B	8	96	8	104
C	12	144	15	120
D	20	300	25	250
E	5	40	8	64
F	2	20	4	24

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

OR

Q. No. 5. b) Construct Laspeyre's index number from the following data : Marks : 6

Year	Commodity – A		Commodity – B		Commodity – C	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity	Price (Rs.)	Quantity
2021	10	20	16	12	15	6
2022	8	24	14	14	20	8

6015/7015

III Semester 5 Yr. B.B.A.LL.B./B.Com.LL.B.
Examination, September/October 2023 (June 2023)
BUSINESS STATISTICS

Duration : 3 Hours   Max. Marks : 80

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

UNIT – I

Q. No. 1. a) Define statistics. Explain the sources of secondary data.   Marks : 10

OR

Q. No. 1. a) Define classification of data. Explain different types of
classification of data.   Marks : 10

Q. No. 1. b) Write short note on ogive curves.   Marks : 6

OR

Q. No. 1. b) Represent the following frequency distribution by Histogram.   Marks : 6

Classes	f
10 – 20	4
20 – 30	10
30 – 40	15
40 – 50	20
50 – 60	17
60 – 70	12
70 – 80	6

UNIT – II

Q. No. 2. a) What do you mean by measures of central tendency ? What
are the various measures of central tendency ?   Marks : 10

OR

P.T.O.

Q. No. 2. a) Calculate : Marks : 10
(i) Mean
(ii) Median and
(iii) Mode for the following.

Marks	No. of Students
More than 30	100
More than 35	92
More than 40	80
More than 45	62
More than 50	40
More than 55	24
More than 60	14
More than 65	06
More than 70	00

Q. No. 2. b) Explain the merits and demerits of median. Marks : 6

OR

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

UNIT – III

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

OR

Q. No. 3. a) Calculate Karl Pearson's co-efficient of skewness. Marks : 10

Classes	f
0 – 5	12
5 – 10	18
10 – 15	28
15 – 20	26
20 – 25	16

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

OR

Q. No. 3. b) What do you mean by quartile deviation and mention the merits of quartile deviation. Marks : 6

UNIT – IV

Q. No. 4. a) Define regression. Explain linear and non-linear regression and lines of regression. Marks : 10

OR

Q. No. 4. a) Calculate the co-efficient of correlation from the following data. Marks : 10

X :	7	6	5	4	3	2	1
Y :	18	16	14	12	10	6	8

Q. No. 4. b) Obtain the rank correlation co-efficient from the following data. Marks : 6

Marks in Stats :	70	65	71	62	58	69	78	64
Marks in Accounts :	91	76	65	83	90	64	55	48

OR

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

UNIT – V

Q. No. 5. a) Calculate Laspeyre's Paasche's and Fisher's index for the following data and test that it satisfies FRT and TRT tests. Marks : 10

Commodities	Base year		Current Year	
	Price	Quantity	Price	Quantity
A	12	10	20	12
B	4	20	4	24
C	8	12	12	15
D	12	15	24	2

OR

Q. No. 5. a) Index numbers are 'specialised averages' discuss. Mention its advantages and purposes. Marks : 10

Q. No. 5. b) Construct cost of living index number by family budget method for the year 1980 taking 1975 as base year. Marks : 6

Commodity	A	B	C	D	E
Quantity in units 1975	50	100	60	30	40
Price per unit 1975	6	2	4	10	8
Price per unit 1980	10	2	6	12	12

OR

Q. No. 5. b) Write short notes on 'Weights' in index numbers. Marks : 6

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.

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

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

Commodities	Base Year		Current Year	
	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

6015/7015

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

P.T.O.

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

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		Current Year	
	Price (Rs.)	Expenditure (Rs.)	Price (Rs.)	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

6015

III Semester 5 Year B.B.A. LL.B. Examination, December 2019
BUSINESS STATISTICS
(2018 and 2019 Batch)

Duration : 3 Hours

Max. Marks : 80

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

UNIT – I

Q. No. 1. (a) What is Primary Data ? Explain various methods of collecting Primary Data.

Marks : 10

OR

(a) Mention the requisites of a good table.

Marks : 10

(b) Sales of a company from 2012-2013 to 2016-17 are given below :

Marks : 6

Year	2012-13	13-14	14-15	15-16	16-17
Sales (Crores)	85	109	204	126	209

Represent this data by a suitable bar diagram.

OR

(b) Write a short note on Pie-Diagram with example.

Marks : 6

UNIT – II

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

Marks : 10

Classes	Frequency
28-31	1
32-35	14
36-39	56
40-43	172
44-47	245
48-51	263
52-55	156
56-59	67
60-63	23
64-67	03

OR

(a) Write merits and demerits of Mean, Median and Mode.

Marks : 10

P.T.O.

(b) Calculate Harmonic Mean for following : Marks : 6

Value	Frequency
0-10	4
10-20	8
20-30	14
30-40	19
40-50	25
50-60	32
60-70	24
70-80	17
80-90	12
90-100	7

OR

(b) Write a short note on Quartiles. Marks : 6

UNIT – III

Q. No. 3. (a) Calculate Karl-Pearson's co-efficient of skewness. Marks : 10

Classes	Frequency
0-5	12
5-10	18
10-15	28
15-20	26
20-25	16

OR

(a) The number of employees and their average wages and variance of the wages per employee for 2 factories are given below. In which factory the variation is greater in the distribution of daily wage/employee ? Marks : 10

	Factory A	Factory B
No. of employees	50	100
Average wage	120	85
Variance	3	4

R.T.O.

(b) What do you mean by Quartile Deviation ? Mention the merits of Quartile Deviation.   Marks : 6

OR

(b) Write a note on skewness.   Marks : 6

UNIT – IV

Q. No. 4. (a) Define Regression. Explain linear and non-linear regression and lines of regression.   Marks : 10

OR

(a) Obtain Rank correlation co-efficient from the following data :   Marks : 10

Marks in Science	Marks in Mathematics
70	91
65	76
71	65
62	83
58	90
69	64
78	55
64	48

(b) From the following data find out two regression lines.   Marks : 6

	X	Y
Mean	15.5	22
S.D.	3	4

$r = 0.85$

OR

(b) Write a short note on Rank-correlation.   Marks : 6

Q. No. 5. (a) Define Index Numbers. Explain different steps involved in the construction of Index Numbers.   Marks : 10

OR

(a) Compute Fisher's Index Number. Show that it satisfies both Time Reversal Test (TRT) and Factor Reversal Test (FRT).   Marks : 10

Item	2018		2019	
	Price	Quantity	Price	Quantity
P	5	6	6	7
Q	7	12	6	13
R	6	15	8	15
S	8	10	8	12

(b) Construct the cost of living index number from the table given below :   Marks : 6

By Family Budget Method

Commodity	A	B	C	D	E
Quantity in units 2015	50	100	60	30	40
Price per unit 2015	6	2	4	10	8
Price per unit 2020	10	2	6	12	12

OR

(b) Write short note on "Weights" in index number.   Marks : 6

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