Reg. No. : ....

Name : ....

I Semester B.B.A./B.B.A. (RTM) Degree (CBCSS-OBE-Regular/Supplementary/Improvement) Examination, November 2023
(2019 Admission Onwards)
Complementary Elective Course
1C01BBA/BBA (RTM) : STATISTICS FOR BUSINESS DECISIONS

Time : 3 Hours

Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries 1 mark. (6×1=6)

1. What is Primary Data ?

2. What do you mean by Tabulation ?

3. What is Time Series ?

4. What is Secular Trend ?

5. What is Linear Correlation ?

6. What is Price Index Number ?

PART – B

Answer **any six** questions. **Each** question carries 2 marks. (6×2=12)

7. What are the characteristics of Statistics ?

8. Distinguish between Classification and Tabulation.

9. Construct the Index Numbers for 2021 on the basis of the prices of 2020, from the following data :

Commodities	1	2	3	4	5
Price in 2020	115	72	54	60	80
Price in 2021	130	89	75	72	105

P.T.O.

10. Fit a trend line through semi-average method for the following data :

Year	2015	2016	2017	2018	2019	2020	2021	2022
Income Rs. in '000	45	49	54	60	80	96	100	120

11. What are the types of Correlation ?

12. Calculate the co-efficient of correlation between X and Y series from the following data :

Particulars	X	Y
No. of pairs of observation	15	15
Arithmetic Mean	25	18
Standard Deviation	3.01	3.03
Sum of squares of deviation from the arithmetic mean	136	138

Summation of product deviations of X and Y series from their respective arithmetic mean = 122.

13. What is Regression ? State the utilities of Regression Lines.

14. From the following information, obtain the regression equation of X and Y.

$\bar{x} = 20, \bar{y} = 15, \sigma_x = 4, \sigma_y = 3, r = 0.7$.

PART – C

Answer **any 4** questions. **Each** question carries **3** marks. (4×3=12)

15. What are the different parts of a table ?

16. What are the differences between Diagrams and Graphs ?

17. Calculate three yearly moving average of the following data :

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
No. of Students	15	18	17	20	23	25	29	33	36	40

18. Calculate the co-efficient of concurrent deviations from the data given below :

Months	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.
Supply	160	164	172	182	166	170	178	192	186
Price	292	280	260	234	266	254	230	190	200

19. From the following data, calculate :
   i) Correlation Co-efficient
   ii) Standard Deviation of y
   $b_{xy} = 0.85y$
   $b_{yx} = 0.89x$
   $\sigma_x = 3$.

20. Calculate the consumer price index number through Family Budget Method for the following data :

Commodity	A	B	C	D	E	F
Weight	50	60	35	40	20	10
Price per units 2020	15	17	8	5	20	6
Price per units 2021	25	28	15	9	22	5

PART – D

Answer **any 2** questions. **Each** question carries **5** marks. (2×5=10)

21. What are the differences between Primary Data and Secondary Data ?

22. Following are the data related with the output of a factory for 7 years :

Year	2010	2011	2012	2013	2014	2015	2016
Output (in tonnes)	47	64	77	88	97	109	113

Calculate trend values through the method of least squares and also forecast the production in 2019 and 2021.

23. Ten competitions in a beauty contest were ranked by three judges in the following order :

First Judge	1	6	5	10	3	2	4	9	7	8
Second Judge	3	5	8	4	7	10	2	1	6	9
Third Judge	6	4	9	8	1	2	3	10	5	7

Use this method of rank correlation to determine which pair of judge has the nearest approach to common taste in beauty.

24. The following data are related with the prices and quantity consumed for 2020 and 2022.

Commodity	2020		2022	
	Price	Qty	Price	Qty
I	12	30	15	35
II	7	12	10	15
III	9	10	7	12
IV	15	20	12	18
V	10	15	15	12

Compute Price Index numbers through :

a) Laspeyre's Method

b) Paasche's Method

c) Bowley – Dorbish Method

d) Fisher's Ideal Method.

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K22U 3389

I Semester B.B.A./B.B.A. (RTM) Degree (CBCSS – OBE – Regular/
Supplementary/Improvement) Examination, November 2022
(2019 Admission Onwards)
COMPLEMENTARY ELECTIVE COURSE
1C01BBA/BBA (RTM) : Statistics for Business Decisions

Time : 3 Hours

Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries 1 mark.

1. What is a pictogram ?

2. Define correlation.

3. What is probable error ?

4. What is ogive ?

5. How one can compute the real income with the help of index number ?

6. Find correlation coefficient, if coefficient of determination is 0.81.   (6×1=6)

PART – B

Answer **any 6** questions. **Each** question carries **2** marks.

7. State the conditions under which the moving average method gives the best estimate of the long run tendency of the data.

8. Briefly explain the uses of cost of living index.

P.T.O.

9. The following data represents the ranks given to ten employees by two performance appraisers. Find any correlation exists between the ranks given by the two appraisers.

Employees	01	02	03	04	05	06	07	08	09	10
Rank Given by Appraiser 1	1	2	3	4	5	6	7	8	9	10
Rank Given by Appraiser 2	1	3	2	4	6	5	9	8	10	7

10. Calculate cost of living index number.

Group	Index	Weight
Food	247	48
Fuel and Lighting	293	12
Clothing	289	9
Housing	100	12
Miscellaneous	236	15

11. $64x - 45y = 24$ (regression eq. y on x)

$5x - y = 22$ (regression eq. x on y)

Find mean of X and Y series.

12. Why classification of data is important in statistical analysis ?

13. List the utilities of time series analysis.

14. What are the essential parts of a statistical table ? (6×2=12)

PART – C

Answer **any 4** questions. **Each** question carries **3** marks.

15. Construct Fisher's Price Index from the following data by taking 2015 as base year.

2015		2020	
Price	Value	Price	Value
50	500	40	480
80	480	70	770
60	180	50	200

16. Briefly explain the importance and uses of index numbers.

17. Distinguish between correlation and regression.

18. Explain different types of bar diagrams.

19. X = 10, Y = 90, Variance of X = 9, Variance of Y = 144 and Correlation coefficient between X and Y is 0.8. Find the regression equations Y on X and X on Y.

20. The monthly sales of a company during 2021-22 are given below.

Month	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March
Sales (in Lakhs)	85	90	100	105	108	112	120	130	134	136	140	142

Find trend values by 4 months moving average.   (4×3=12)

PART – D

Answer **any 2** questions. **Each** question carries **5** marks.

21. From the following data, compute Pearson's coefficient of correlation between age and success in examination.

Age of the candidate	13-14	14-15	15-16	16-17	18-19	19-20	20-21	21-22
Candidates appeared	300	100	50	150	400	250	150	25
Successful candidates	180	80	30	90	248	140	90	12

22. Define index number. Briefly explain different methods of construction of price indices.

23. Fit a straight line trend by the method of least squares and estimate trend values.

Year	2001	2002	2003	2004	2005	2006	2007	2008
Sales (Rs.)	70	80	82	73	84	89	82	94

24. Briefly explain the methods of collecting primary data.   (2×5=10)

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Reg. No. : ....

Name : ....

I Semester B.B.A./B.B.A. (R.T.M.) Degree (C.B.C.S.S. – O.B.E. – Regular/
Supplementary/Improvement) Examination, November 2021
(2019 Admission Onwards)
Complementary Elective Course
1C01BBA/BBA(RTM) : STATISTICS FOR BUSINESS DECISIONS

Time : 3 Hours   Max. Marks : 40

PART – A

Answer **all** questions. **Each** question carries **1** mark :

1. What is secondary data ?

2. What is meant by census ?

3. What is classification ?

4. What is time series ?

5. Define correlation.

6. What is trend ?   (6×1=6)

PART – B

Answer **any 6** questions. **Each** question carries **2** marks :

7. Define statistics.

8. List out the components of time series.

9. What is whole sale price index number ?

10. List out two uses of consumer price index.

11. What is chain base index numbers ?

12. What is probable error of coefficient of correlation ?

13. What is perfect correlation ?

14. What is simple and multiple regression ?   (6×2=12)

P.T.O.

K21U 6744

PART – C

Answer **any 4** questions. **Each** question carries **3** marks :

15. List out the objectives of classification.

16. Which are the functions of statistics ?

17. 'Statistics is like clay of which you can make God or Devil as you please.' Comment on the statement.

18. Explain the method of moving average.

19. What are the steps involved in the construction of consumer price index numbers ?

20. Calculate the coefficient of correlation between x and y from the following data :

	x	y
No. of pairs of observation	15	15
Standard deviation	3.01	3.03
Covariance between x and y	8.13	(4×3=12)

PART – D

Answer **any 2** questions. **Each** question carries **5** marks :

21. Define index number. Explain various steps in the construction of index numbers.

22. What is meant by diagrams ? Discuss various types of diagrams used in statistics.

23. Find Karl Pearson's coefficient of correlation between heights and weights of 10 students and comment.

    Heights (inches) : 62 72 78 58 65 70 66 63 60 72

    Weights (kgs.) : 50 65 63 50 54 60 61 55 54 65

24. Work out the trend values by 4 yearly moving average method for the following data and plot the given values and trend values on a graph :

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Production	80	90	92	83	87	96	100	110	105	118

(2×5=10)

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K20U 3290

PART – A

Answer **all** questions. **Each** question carries **1** mark :

1. What is primary data ?

2. What is histogram ?

3. What is time series ?

4. State any two factors responsible for seasonal variations.

5. What is moving average ?

6. What is Time Reversal Test ? (6×1=6)

PART – B

Answer **any 6** questions. **Each** question carries **2** marks :

7. Discuss the uses of statistics.

8. Distinguish between classification and tabulation.

9. State the significance of time series analysis.

10. Discuss the various methods of measuring secular trend.

11. What are the components of time series ?

P.T.O.

12. State the uses of Consumer Price Index.

13. What is meant by regression analysis ?

14. Calculate price index number using Laspeyre's and Paasche's method

Commodity	2015		2018	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
A	5	15	7	12
B	4	5	6	4
C	7	4	9	3
D	52	2	55	2

(6×2=12)

PART – C

Answer **any 4** questions. **Each** question carries **3** marks :

15. Explain the functions of statistics.

16. What are the different methods of constructing Consumer Price Index ?

17. Discuss the various methods of finding correlation.

18. Using the following data prepare a pie diagram.

Class : I II III IV V

No. of Students : 168 200 132 100 120

19. From the data given below estimate trend values by four yearly moving average.
(Rs. in Crores)

Year : 2010 2011 2012 2013 2014 2015 2016 2017 2018

Sales : 3 6 9 8 7 5 8 10 4

20. Calculate Fisher's ideal index number.

Commodity	2017		2018	
	Price (Rs.)	Quantity	Price (Rs.)	Quantity
1	15	25	25	20
2	40	30	60	35
3	30	40	50	38
4	10	10	20	12
5	30	15	40	12

(4×3=12)

PART – D

Answer **any 2** questions. **Each** question carries **5** marks.

21. Explain the various sources of primary and secondary data.

22. Define index number. What are the problems in the construction of index numbers ?

23. Compute trend values through the method of least squares. Also forecast the production in 2019 (Production in tonnes).

Year	:	2010	2011	2012	2013	2014	2015	2016
Production	:	47	64	77	88	97	109	113

24. Calculate coefficient of correlation from the data given below :

District	% of Educated	% of Employed
1	55	30
2	45	35
3	65	20
4	80	40
5	75	35
6	60	25
7	70	45

(2×5=10)

Reg. No. : ....

Name : ....

K19U 3290

I Semester B.B.A/B.B.A(RTM) Degree (CBCSS(OBE) – Regular)
Examination, November – 2019
(2019 Admission)
COMPLEMENTARY ELECTIVE COURSE
1C 01BBA/BBA(RTM) : STATISTICS FOR BUSINESS DECISIONS

Time : 3 Hours   Max. Marks : 40

PART – A

Answer **All** questions. Each question carries 1 mark.   **(6×1=6)**

1. What is secondary data?

2. What is pie diagram?

3. Define time series.

4. State any two causes of seasonal variations.

5. What is meant by semi average?

6. Define index number.

PART – B

Answer any **Six** questions. Each question carries **2** marks.   **(6×2=12)**

7. Discuss the general rules for constructing diagrams.

8. State any four characteristics of classification.

9. What are the objectives of time series analysis?

10. Discuss the uses of cyclical variations.

11. What are the components of time series?

12. Discuss the uses of index numbers.

13. What is Consumer Price Index? State its uses.

14. What is regression?

P.T.O.

PART - C

Answer any **Four** questions. Each question carries **3** marks. (4×3=12

15. Discuss the scope of statistics.

16. What are the different methods for drawing graphs for frequency distribution?

17. Explain the problems in the construction of index numbers.

18. Calculate 3 yearly moving averages from the following data (Rs. in thousands)

Year :	2008	2009	2010	2011	2012	2013
Sales :	55	47	59	151	79	36
Year :	2014	2015	2016	2017	2018	
Sales :	45	72	83	89	102	

19. From the following information calculate consumer price index number using family budget method.

Commodities	Weight	Price per unit in 2015(Rs.)	Price per unit in 2018(Rs.)
A	50	15	25
B	60	17	28
C	35	8	15
D	40	5	9
E	20	20	22
F	10	6	5

20. Following are the details of 10 participants in an interview. They are in different age groups. The marks scored by them are ranked according to their age which are stated as below. Find, out rank correlation.

Rank (age) :	1	2	3	4	5	6	7	8	9	10
Rank (mark) :	3	4	1	5	10	8	7	2	6	9
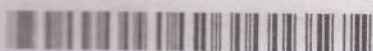
PART-D

Answer any **Two** questions. Each question carries **5** marks. **(2×5=10)**

21. Define classification and tabulation. Discuss the various methods of classification of data.

22. What is trend? What are the different methods of studying secular trend?

23. Calculate co-efficient of correlation between rainfall and agricultural production through Karl Pearson's co-efficient of correlation method.

Rainfall	:	22	24	26	28	30	32	34
Production	:	40	36	25	50	48	46	38

24. Calculate Index Numbers from the following data by:

   (i)   Laspeyre's

   (ii) Paasche's

   (iii) Bowley's and

   (iv) Fisher's method

Commodity	Price (Base)	Quantity (Base)	Price (Current)	Quantity (Current)
X	8	5	10	11
Y	8.5	6	9	9
Z	9	4	12	6

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K19U 3213

I Semester B.B.A/B.B.A(RTM)/B.B.A(TTM). Degree

(CBCSS-Supplementary/Improvement) Examination, November - 2019

(2014-2018 Admissions)

Complementary Course

1C01BBA(TTM)/BBA/BBA(RTM) : BUSINESS STATISTICS

Time : 3 Hours   Max. Marks :40

SECTION - A

I.   Answer **all** questions. Each carries ½ mark.   (4×½=2)

1)   What do you mean by multiple bar diagram?

2)   What is Kurtosis?

3)   What is Statistics?

4)   Write a brief description about variable?

SECTION - B

II. Answer any **four** questions. Each carries **1** mark.   (4×1=4)

5)   Write a short note on Lorenz curve?

6)   Write any two limitations of diagrams?

7)   In a certain frequency distribution, mean=30kg, median= 27kg find mode?

8)   Give a brief description about concurrent deviation method of correlation?

9)   What are the different sources of secondary data?

10) What do you mean by positively skewed distribution?

P.T.O.

SECTION -C

III. Answer any **six** questions. Each carries **three** marks.   (6×3=18)

11) What are the functions of statistics?

12) What are the general rules for constructing diagrams?

13) Draw a multiple bar diagram from the following data:

Year	Sales (RS'000)	Gross Profit (RS'000)	Net profit (RS'000)
2014	120	40	20
2015	135	45	30
2016	140	55	35
2017	150	60	40

14) Obtain the value of median from the following data of the monthly income of 10 employees of a company in Rs:

   14391, 15384, 25591,15407, 16672, 26522, 16777, 26753, 27850, 37490.

15) Write a short note about importance of correlation in business and economic activity.

16) Calculate harmonic mean for the given below:

Marks	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequencies	2	3	11	20	32	25	7

17) From the following data of values of X and Y, find the regression equation of Y on X.

X	2	3	4	5	6
Y	3	5	4	8	9

18) Compare mean, median and mode?

SECTION - D

IV. Answer any **two** questions. Each question carries **8** marks. (2×8=16)

19) The following table gives the indices of industrial production of registered unemployed (in hundred thousands).Calculate the value of the coefficient of correlation.

Year	2009	2010	2011	2012	2013	2014	2015	2016
Index of production	100	102	104	107	105	112	103	99
Unemployed	15	12	13	11	12	12	19	26

20) Define statistics and discuss various applications and importance of statistics.

21) Find standard deviation from the following data. Also fond variance and co efficient of variation.

Size	0-2	2-4	4-6	6-8	8-10	10-12
Frequency	2	4	6	4	2	6

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