C - 143

Total No. of Pages : 2

Seat No.	

B. Com. (Part - II) (Semester - III) Examination, December - 2015
BUSINESS STATISTICS (Paper - I) (New) (Revised)
Sub. Code : 63110

Day and Date : Tuesday, 08 - 12 - 2015 **Total Marks : 50**

Time : 03.00 p.m. to 05.00 p.m.

Instructions :
1) **Attempt any five questions.**
2) **Figures to the right indicate full marks.**
3) **Use of non programmable calculator is allowed.**

Q1) a) What is sampling? State advantages of sampling over census method **[5]**

b) State empirical relation between mean, median and mode. Find mode of the distribution whose mean is 45.9 and median is 49. **[5]**

Q2) Define measure of central tendency and state different measures of central tendency. Calculate mean, median and mode of wages of 50 workers of a firm given in the following table. **[10]**

Wage in Rs.	25	35	45	55	65
No. of workers	3	12	20	10	5

Q3) State absolute and relative measures of dispersion. Calculate coefficient of variation from the following data. **[10]**

Pocket Expense in Rs.	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students	3	4	8	10	13	2

Q4) Define mean and standard deviation. For a group of 100 items the mean and variance are 60 and 25 respectively. For another group of 50 items mean is 90 and S.D. is 4. Find the mean and S.D. of the combined group of size 150 items. **[10]**

P.T.O.

Q5) What is correlation? Explain positive and negative correlation. Calculate Karl Pearson's coefficient of correlation from the following data. [10]

Sale (X)	23	22	21	21	20	20	19	19	18	17
Profit (Y)	20	15	16	22	19	15	11	14	16	12

Q6) Write equations of two lines of regression. You are given $\sum X = 400, \sum Y = 500, N = 10, \sigma_X = 2.5\ \sigma_Y = 3.5$ and $r = 0.8$. Obtain the regression equation of Y on X, estimate the value of Y when X = 55. [10]

Q7) a) The mean and variance of three observations 2, A and B are 3 and 1 respectively. What is the product of two observations A and B? [5]

b) State relation between correlation coefficient and two regression coefficients. If r = –0.6 and $b_{yx} = -0.3$ then find b_{xy}. [5]

Seat No.	

G - 230

Total No. of Pages : 2

B.Com. (Part - II) (Semester - III) Examination, November - 2014

BUSINESS STATISTICS (Paper - I) (New)

Sub. Code : 63110

Day and Date : Friday, 28 - 11 - 2014 **Total Marks : 50**

Time : 3.00 p.m. to 5.00 p.m.

Instructions :

1) **Attempt any FIVE questions.**
2) **Each question carry 10 marks.**
3) **Use of calculator is allowed.**
4) **Figures to the right indicate marks.**

Q1) a) Define the terms. Give example of each term.

i) Discrete variable ii) Continuous variable

b) If the mean and Std. deviation of series of 100 values are 50 and 4 respectively. Find the sum of values and sum of squares of values of this series.

[5 + 5 = 10]

Q2) What is average? When the average is said to be good average? How does arithmetic mean satisfy it?

The monthly income of seven families is given below.

Family	A	B	C	D	E	F	G
Income (Rs)	7000	5500	4000	2700	3000	1500	3000

Find mean, median and mode for same. **[10]**

Q3) Define S.D. and C.V.

What is the use of C.V?

The mean and standard deviation of a sample of size 10 were found to be 9.5 and 2.5 respectively.

Later on an additional observation "15" is included in the original sample. Find mean and standard deviation of the 11 observations. **[10]**

P.T.O.

Q4) What is meant by correlation? Distinguish between Positive and Negative correlation. **[10]**

Find Karl-pearson's coefficient of correlation

Age of Cars	2	4	6	7	8	10	12
M.cost (Rs.) (In'00 Rs.)	16	15	18	19	17	21	20

Q5) Give definition of regression coefficients. What are the equations of regression lines? **[10]**

Obtain equations of regression lines for following

X	2	4	6	8	10
Y	5	7	9	8	11

Q6) Define Rank correlation coefficient.

What are the steps to find rank correlation coefficient for certain pair of observations? **[10]**

Calculate rank correlation coefficient for following.

Sales (X)	50	55	60	65	65	65	70
Expenses (Y)	11	13	14	15	16	13	22

Q7) a) If quartile deviation of certain data is 40 and coefficient of Q.D. is 0.2 Find two quartiles.

b) Why sampling method is better than census method?

[5 + 5 = 10]

SF - 138

Total No. of Pages : 2

Seat No.	

B.Com. (Part - II) (Semester -III) Examination, November - 2016

STATISTICS

BUSINESS STATISTICS (Paper - I)

Sub. Code : 63110

Day and Date : Monday, 21 - 11 - 2016 **Total Marks : 50**

Time : 03.00 p.m. to 05.00 p.m.

Instructions :
1) **Attempt any five from following.**
2) **Use of calculator is allowed.**
3) **Figures to the right indicate full marks.**
4) **Each question is for 10 marks.**

Q1) a) Define the term with suitable example **[5+5]**
i) Discrete variable
ii) Qualitative variable

b) The average bonus to be paid to 200 workers was known to be 5000 Rs. Later on each worker decides to contribute 15% of their bonus to the Relief fund. Find new average bonus?

Q2) Why arith. mean is called as good measure of central tendency? **[10]**
Find value of 'x' from following frequency distribution of arith mean of the same is 4.876

Values	3.2	5.8	7.9	4.5
Frequency	x	(x+2)	(x–3)	(x+6)

Q3) What are the different absolute and relative measures if dispersion? **[10]**
Which of them is good measure? Why it is called as good measure of dispersion?
Find Std. Deviation and its coefficient for following

No. of wickets	0	1	2	3	4	5
No. of matches	5	15	20	40	12	8

Q4) Define correlation. **[10]**
Explain the concept of linear and non linear correlation
Find karl pearson's coefficient of correlation for following data and comment on type of correlation.

x	1	2	3	4	5
y	1	4	9	16	25

P.T.O.

Q5) What are the equations of regression lines? Give any two examples of dependant and independant variables in real life. [10]
Obtain equations of regression lines from following
$\overline{X} = 65$, $\overline{Y} = 67$, $\sigma_x = 2.5$, $\sigma_y = 3.5$ and r = correlation coefficient between x&y=0.8 estimate value of Y when x = 70

Q6) Explain why sampling technique is better method than census method? [10]
What are the different methods of sampling? Explain any one of them?

Q7) a) What is relation between coefficient of correlation and regression coefficients? Use it to find regression coefficient of X on Y if. [5+5]
i) Correlation coefficient between X & Y is 0.4
ii) Regression coefficient of Y on X is 1.2
b) If quartile deviation of certain data is 1.3 and coefficient of quartile deviation is 0.4 find value of first and third quartile?

⊖⊖⊖

SH - 226

Total No. of Pages : 2

Seat No.	

B.Com. (Part - II) (Semester - III) Examination, November - 2017

STATISTICS (Paper - I) (Revised)

Business Statistics

Sub. Code : 63110

Day and Date : Thursday, 23 - 11 - 2017

Time : 03.00 p.m. to 05.00 p.m. **Total Marks : 50**

Instructions : 1) Attempt ANY FIVE questions.

2) Use of non-programmable calculator is allowed.

3) Figures to the right indicate full marks.

Q1) a) If the arithmetic mean of 10 observations is 5.2 and sum of squares of observations (ΣX^2) is 400, find its S.D. and C.V. **[5]**

b) Distinguish between primary data and secondary data. **[5]**

Q2) Define Karl Pearson's coefficient of correlation (r) between two variables. Interpret:

i) $r = +1$ ii) $r = -1$ andiii) $r = 0$.

Compute Spearman's rank correlation coefficient (R) from the following data: **[10]**

X:	50	52	56	51	45	58	65	75	90	50
Y:	114	100	101	110	90	118	125	135	155	110

Q3) Define arithmetic mean and state its merits. The distribution of income (in Rs.) of 750 persons is given below :

Income (in '000 Rs) :	Below 5	5-10	10-15	15-20	20-25	25-30	30 and above
No.of Persons:	60	90	145	160	140	105	50

Compute median and mode. **[10]**

P.T.O.

Q4) State absolute and relative measures of dispersion. Calculate M. D. about median from the following data : **[10]**

45 39 40 48 50 55 41 49 44 45

Q5) Define (i)regression coefficient of y on x and (ii) regression coefficient of x on y. State the relation between correlation coefficient and regression coefficients. Obtain the equation of line of regression of y on x from the following data : **[10]**

X:	8	9	5	10	12	8	11
Y:	4	5	2	5	7	6	6

Q6) Define S.D. and C.V. The prices of two commodities at 7 different locations are given below:

Commodity A (X):	15	17	19	14	18	20	22
Commodity B (Y):	40	39	42	48	45	52	55

Compare the variations in the values of X and Y using CV. and comment on it. **[10]**

Q7) a) Explain the technique of stratified random sampling. **[5]**

b) The mean price of 25 books is Rs. 250. Of them the mean price of 15 books is Rs. 230. Find the mean price of remaining books. **[5]**

Seat No.	

SN – 35

Total No. of Pages : 2

B.Com. (Part - II) (Semester - III) Examination, April - 2017

BUSINESS STATISTICS (Paper - I)

Sub. Code : 63110

Day and Date : Monday, 24 - 04 - 2017

Time : 12.00 noon to 2.00 p.m.

Total Marks : 50

Instructions : 1) Attempt any FIVE questions.
2) Figures to the right indicate full marks.
3) Use of non-programmable calculator is allowed.
4) Graph paper will be supplied on request.

Q1) a) Explain primary data and Secondary data. Give an example of each.

b) State the empirical relation between mean and median and mode. Use it to find Mean, if Median is 40 and Mode is 44. **[10]**

Q2) State the relation between correlation coefficient and regression coefficients and verify them by using following data. **[10]**

X	2	3	4	7	6
Y	10	7	3	1	2

Q3) Define combined mean and combined S.D. for two groups. The Mean and S.D. of 100 items was found to be 65 and 10 respectively. Another group of 50 items with each value equal to 59. Find mean and variance of combined group of 150 items. **[10]**

Q4) Define the terms population and sample. Give an example of each. State the advantages of sampling method over census method. **[10]**

P.T.O.

Q5) State the equations of regression lines. From 10 observations on price (X) and supply (Y) of a commodity, the following data were obtained.

$\Sigma X = 130, \Sigma Y = 220, \Sigma X^2 = 2288, \Sigma XY = 3467$

Compute the equation of line of regression of supply on price and estimate the supply when price is 16 units. **[10]**

Q6) State the requirements of a good averages. Define mean and median. Find mean and median for the following data. **[10]**

Wage in Rs.	30-40	40-50	50-60	60-70	70-80
No. of workers	9	13	25	11	7

Q7) a) Interpret, if (i) $r = +1$, (ii) $r = -1$, (iii) $r = 0$, where r is correlation coefficient.

b) Define M.D. about mean. Find M.D. about mean from the following data.

31, 35, 29, 63, 55, 72, 37. **[10]**

✱✱✱

SH - 236

Total No. of Pages :3

Seat No.	

B.Com. (Part - II) (Semester - IV) Examination, November - 2017

STATISTICS (Revised)

Business Statistics (Paper - II)

Sub. Code : 63124

Day and Date : Thursday, 30 - 11 - 2017 **Total Marks : 50**

Time : 12.00 noon to 02.00 p.m.

Instructions :
1) **Attempt ANY FIVE questions.**
2) **Use of non-Programmable calculator is allowed.**
3) **Figures to the right indicate full marks.**

Q1) a) State the advantages of statistical Quality Control (S.Q.C) **[5]**

b) The first and third quartiles of a normal distribution are 80 and 116 respectively. Find the mean and Standard Deviation (S.D.) **[5]**

Q2) Define index number. State the formula for Fisher's price index number. Compute Fisher's quantity index number from the following data : **[10]**

Commodity	1999		2000	
	Price	Expenditure	Price	Expenditure
A	8	80	10	80
B	20	100	25	250
C	5	75	8	96
D	10	70	12	120

P.T.O.

Q3) Define time series. State the components of time Series. Compute 3 - yearly moving averages from the following data. Plot the original and trend values on the same graph.

Year:	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Production: ('000 tons)	21	22	23	25	24	22	25	26	27	26

[10]

Q4) Define standard normal probability distribution. State its mean and variance. If X has normal distribution with mean 100 and Variance 25 find i) $P(X > 108)$ ii) $P(X \leq 110)$ and iii) $P(90 \leq X \leq 110)$.

(Area for S.N.V. Z from Z = 0 to Z = 1.6 is 0.4452 and Z = 0 to Z = 2 is 0.4772) [10]

Q5) What is S.Q.C.? Following data were obtained over a period of 10 days on a quality Characteristic of a certain manufacturing product.

Sample No :	1	2	3	4	5	6	7	8	9	10
Mean :	12.8	13.1	13.5	12.9	13.2	14.1	12.1	15.5	13.9	14.2
Range :	2.1	3.1	3.9	2.1	1.9	3.0	2.5	2.8	2.5	2.0

Construct $\bar{X}$ - Chart and comment on the state of the process. (For n = 5, $A_2 = 0.58$) [10]

Q6) Define the terms: mutually exclusive events and Independent events.

If $P(A) = 0.3$ $P(B) = 0.6$ and $P(A \cap B) = 0.2$, find i) $P(A \cup B)$ ii) $P(A/B)$ and iii) $P(\bar{A})$. [10]

Q7) a) Explain cyclical variations in time series. [5]

b) Calculate price index number by using simple aggregate method from the following data.

Commodity	Rice	Wheat	Oil	Fish
Base year price	10	8	40	80
Current year price	15	12	80	100

[5]

ⓘⓘⓘ