

22/11/2018

Roll No.

Total No. of Pages : 02

Total No. of Questions : 18

B.Com. (Hons) (2018 Batch) (Sem.-2)
BUSINESS STATISTICS
 Subject Code : BCOM-GE-201-18
 M.Code : 75830

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B consists of FOUR Sub-sections : Units-I, II, III & IV.
3. Each Sub-section contains TWO questions each, carrying TEN marks each.
4. Students have to attempt any ONE question from each Sub-section.

SECTION-A

Write briefly :

- Q1. What is the difference between the inferential statistics and descriptive statistics?
- Q2. What is Sampling Distribution?
- Q3. What is difference between parameter and statistics?
- Q4. What are properties of median?
- Q5. What is Quartile Deviation?
- Q6. What is R-square?
- Q7. What are the properties of regression coefficient?
- Q8. What is Normal Probability Distribution Function?
- Q9. What is Marginal Probability?
- Q10. What is the addition law of probability?

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SECTION-B

UNIT-I

- Q11. What are the different sources of primary and secondary data?
- Q12. Discuss the probability and non-probability sampling techniques.

UNIT-II

- Q13. What is sampling distribution? What is the need of sampling distribution? What is the procedure to produce a sampling distribution of mean?
- Q14. Find the mean, standard deviation and variance of the following data :

X	57	59	50	55	56	62	64	57	66	58
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UNIT-III

- Q15. What is Correlation? What is the difference between rank correlation and simple correlation? What is non-linear correlation?
- Q16. The following data shows price and number of units sold at different price levels. Find the effect of price on the number of units sold using least square method?

Price	242	216	215	236	232	235	272
Number of units	23.9	23.0	22.9	28.8	29.2	26.4	24.8

UNIT-IV

- Q17. Solve the following probability problems -
 - a) If $P(A \text{ and } B) = 0.5$ and $P(B) = 0.7$, find $P(A|B)$.
 - b) If $P(A) = 0.6$ and $P(B) = 0.5$ and $P(A \text{ and } B) = 0.7$, find $P(A|B)$.
- Q18. What is Poisson distribution? What are the essential properties of Poisson distribution? What is the difference between binomial distribution and Poisson distribution?

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Com.(Hons) (2018 Batch) (Sem.-2)

BUSINESS STATISTICS

Subject Code : BCOM-GE-201-18

M.Code : 75830

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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- Each Sub-section contains TWO questions each, carrying TEN marks each.
- Student has to attempt any ONE question from each Sub-section.

SECTION-A

Q1. Write briefly :

- What is data?
- What is randomness?
- What is sample?
- What is mode?
- What is quartile deviation?
- What is Variance?
- What is rank correlation?
- What is regression coefficient?
- What is probability?
- What is binomial distribution?

SECTION-B

UNIT-I

Q2. What is meant by business statistics? Discuss the importance and applications of business statistics in present competitive scenario.

Q3. Write notes on:

- Advantages and limitations of stratified sampling.
- Difference between descriptive and inferential statistics.

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UNIT-II

Q4. The annual salaries of a group of employees are given in the following table:

Salaries (in Rs. 000)	45	50	55	60	65	70	75	80
Number of persons	3	5	8	7	9	7	4	7

Calculate the standard deviation of the salaries.

Q5. Write notes on:

- Merits and limitations of harmonic mean.
- Properties of Standard deviation.

UNIT-III

Q6. Calculate Karl Pearson's coefficient of correlation from the following data:

X \ Y	200-300	300-400	400-500	500-600	600-700
10-15	-	-	-	3	7
15-20	-	4	9	4	3
20-25	7	6	12	5	-
25-30	3	10	19	8	-

Q7. Write notes on:

- Difference between correlation and causation
- Relationship between correlation and regression coefficient

UNIT-IV

Q8. Write notes on:

- Theorems of probability
- Properties of binomial distribution

Q9. The following data show the number of seeds germinating out of 10 on damp filter for 80 set of seeds. Fit a binomial distribution to this data:

X :	0	1	2	3	4	5	6	7	8	9	10
Y :	6	20	28	12	8	6	0	0	0	0	0

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SECTION-A

1. Write briefly :

- (a) Define Primary data.
- (b) Define Stratified sampling.
- (c) Define Judgement sampling.
- (d) Define Harmonic mean.
- (e) Define Quartiles.
- (f) Define Variance.
- (g) Define Rank correlation.
- (h) State the principle of least square.
- (i) State Bayes's theorem.
- (j) Define Normal distribution.

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SECTION-B

UNIT-I

2. Draw a bar chart of the procurement of rice (in tons) in an Indian state :

Years	1998	1999	2000	2001	2002	2003
Rice in tons	4500	5700	6100	6500	4300	7800

3. What do you mean by sampling? Critically examine the well known methods of probability sampling and non-probability sampling.

UNIT-II

4. Find the mean of the following data :

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of Students	42	44	58	35	26	15

5. Calculate the Standard deviation :

X	50	60	70	80	90	100	110	120
F	14	40	54	46	26	12	6	2

UNIT-III

6. From the following data, obtain the two regression equations :

Sales	91	97	108	121	67	124	51	73	111	57
Purchase	71	75	69	97	70	91	39	61	80	47

7. Explain the meaning and significance of the concept of correlation. How will you calculate it from statistical point of view?

UNIT-IV

8. Define Random Experiment and trial. Find the probability that in the random arrangement of the letters of the word 'ASSASSINATION', the four 'S' come consecutively.

9. Define Poisson distribution and state the condition under which this distribution is used. Also obtain the Poisson distribution as a limiting case of binomial distribution.

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Roll No.
Total No. of Questions : 07
Total No. of Pages : 02

B.Com. (2011 & Onward) (Sem.-2)
BUSINESS STATISTICS
Subject Code : BCOP-204
Paper ID : [81120]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

1. Write briefly :

- Using the values 2, 4, 8 verify that $A.M. > H.M.$
- Find out median, when $\bar{X} = 20$, Mode = 21.
- From the following data calculate: Quartile deviation $X = 4, 9, 14, 19, 24, 29, 34, 39, 44, 49, 54$.
- Find the coefficient of skewness from following information. Difference of two quartiles = 8, Mode = 11, Mean = 8, Sum of two quartiles = 22
- Two judges in a beauty contest ranked the entries as follows :

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

What degree of agreement is there between the judgment of the judges?

- From the following data, calculate the no. of variables $\Sigma xy = 135$, $\sigma_x = 2$, $\sigma_y = 3$, $r = 0.9$.
- Calculate variance of Y for following data $\sigma_x = 3$, regression coefficient of X on Y 0.6 and $r = 0.8$.
- Given $\bar{X} = 20$, $\bar{Y} = 25$, $b_{yx} = (-1.5)$ find regression equation of Y on X.

- For two variables X, Y $r = 0.6$, $\text{Cov}(X, Y) = 18$ variance of X is 25. Find variance of Y.
- Calculate mean, given that Mode = 29, variance = 100, Karl-Pearson's coefficient of skewness = -0.9.

SECTION-B

- Give the definition of statistics and discuss its scope and limitations.
- Form the following data calculate the modal value.

Weight	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of persons	4	6	20	32	33	17	8	2

- Calculate S.D. from the following data :

Classes	10-20	20-30	30-40	40-50	50-60	60-70
f	2	4	8	10	12	4

- Calculate Bowley's coefficient of skewness :

Marks	5	15	25	35	45	55
No. of students	10	20	30	50	40	30

- Calculate Karl Pearson's coefficient of correlation from the following data :

X	20	24	22	26	24	28	18	24	28	26
Y	14	18	24	18	26	16	20	24	14	26

- Calculate r_t for the following data :

X	75	73	72	72	63	62	55	50
Y	10	11	13	13	13	20	16	28

- Two lines of regression are $X + 2Y = 5$ and $2X + 3Y = 8$ and variance X is 12. Calculate the value of $\bar{X}$, $\bar{Y}$, variance of Y and r.

- Compute the trend values by method of least squares from following data :

Year	1991	1992	1993	1994	1995	1996	1997
Production	80	90	92	83	94	99	92

- Calculate 3 yearly and 5 yearly moving averages for the following series :

Year	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Sale	30	36	45	54	75	60	60	78	90	120	114

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Total No. of Pages: 42

B.COM(Sem.2)
BUSINESS STATISTICS
Subject Code: BCOM-204
Paper ID: B-1120

Time: 3 hrs.

Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:

1. Section A is COMPLETORY consisting of TEN questions carrying TWO marks each.
2. Section B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION A

1. Write short notes on:

- a) Statistical units
- b) Raw data
- c) Parts of a table
- d) Relation between mean Median Mode
- e) Bowley's Coefficient of Skewness
- f) Law Degree of correlation
- g) Regression Equations
- h) Harmonic mean
- i) Secular trend
- j) Seasonal variations

SECTION B

2. "Statistics is a method of decision making in the face of uncertainty on the basis of numerical data and calculated risks." Comment.

3. Calculate the marks from the following Marks No. of student

Below 10	4
Below 20	6
Below 30	24
Below 40	46
Below 50	67
Below 60	86
Below 70	96
Below 80	99
Below 90	100

M12011

4. From the prices x and y of shares A & B respectively given below, state which share is more stable in value

Price of share A(x)	Price of share B(y)
55	108
54	107
52	105
53	106
56	108
58	107
52	104
50	103
51	104
49	101

5. a) Define Correlation. Explain various types of correlation with suitable e.g.
b) Draw a scatter diagram from the data and interpret the results

x	10	20	30	40	50	60	70	80
y	32	20	24	36	40	28	38	44

6. From the following data obtain two regression equations

Sales	Purchases
91	71
97	78
108	69
121	97
67	70
124	91
81	88
73	61
111	80
57	47

7. What is a time series analysis and what is its main component. Give illustrations for each of them.

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Roll No.
Total No. of Questions: 07
Total No. of Pages: 02

B.Com. (2011 & Onwards) (Sem. - 2)
BUSINESS STATISTICS
M Code: 22011
Subject Code: BCOP-204
Paper ID: [B1120]
Time: 3 Hrs.
Max. Marks: 60

INSTRUCTIONS TO CANDIDATES:
1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains SIX questions carrying TEN marks each and students has to attempt any FOUR questions.

SECTION A

1. a) Why is Arithmetic Mean considered to be the most suitable measure of Central Tendency?
- b) Distinguish between Classification and Tabulation.
- c) Distinguish between Questionnaire and Schedule.
- d) Explain the mathematical properties of Standard Deviation.
- e) Explain the properties of Regression coefficients.
- f) Explain the desirable properties of a good average.
- g) Distinguish between Sample mean and population mean.
- h) Distinguish between the trend and seasonal fluctuation in Trend Analysis.
- i) Define Range as a measure of Skewness.
- j) Discuss the advantages of graphical representation of data.

SECTION B

2. Define Statistics. Discuss its functions as well as limitations.
3. What do you mean by Questionnaire? Also explain the various steps of framing a Questionnaire.

4. In the frequency distribution of 100 families given below, the number of families corresponding to expenditure groups 20-40 and 60-80 are missing from the table. However, median is known to be 50. Find the missing frequencies.

Expenditure	0-20	20-40	40-60	60-80	80-100
No. of families	14	?	24	?	15

5. Find the standard deviation and Coefficient of variance for the data given below.

Weekly Wages (Rs.)	150-180	180-210	210-240	240-270	270-300	300-330	330-360	360-390	390-420
No. of Workers	18	23	40	25	16	13	8	5	3

6. Find Karl Pearson's coefficient of Correlation from the following series of marks secured by 10 students in class test in Mathematics and Statistics.

Marks in Maths	45	70	65	30	90	40	50	75	85	60
Marks in Statistics	35	90	70	40	95	40	60	80	80	50

Take 60 and 65 respectively as assumed means for the above two series.

7. (a) What is Time Series? Discuss its components.
(b) For the data given below, calculate the trend values taking 3yearly and 5yearly period of moving average.

Year	Sales ('000 Units)	Year	Sales ('000 units)
1994	9	2002	16
1995	12	2003	18
1996	11	2004	20
1997	8	2005	24
1998	14	2006	23
1999	15	2007	25
2000	27	2008	27
2001	18		

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Roll No.

Total No. of Pages : 02

Total No. of Questions : 07
B.Com. (2013 to 2017 Batch) (Sem.-2)

BUSINESS STATISTICS
Subject Code : BCOP-204
Paper ID : [B1120]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.

SECTION-A

I. Answer briefly :

- Define business statistics.
- What are limitations of statistics?
- What is primary data?
- What is central tendency?
- What is Median?
- What is Lorenz Curve?
- What is skewness?
- What is Kurtosis?
- What is semi average method?
- What is method of least square?

SECTION-B

- Explain correlation in details.
- Represent the following data by a histogram :

Marks	No. of Students	Marks	No. of Students
0-10	8	50-60	60
10-20	12	60-70	52
20-30	22	70-80	40
30-40	35	80-90	30
40-50	40	90-100	5

- Calculate the median for the following frequency distribution:

Marks	No. of Students	Marks	No. of Students
45-50	10	20-25	31
40-45	15	15-20	24
35-40	26	10-15	15
30-35	30	5-10	7
25-30	42		

- From the following table calculate the coefficient of correlation by Karl Pearson method:

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

- Arithmetic mean of X and Y series are 6 and 8 respectively.
- What are the components of time series? Explain measurement of trend in details.
- Assume a four-yearly cycle and calculate the trend by the method of moving averages from the following data relating to the production of tea in India :

Year	Production (m.lbs.)	Year	Production (m.lbs.)
2000	464	2005	540
2001	515	2006	557
2002	518	2007	571
2003	467	2008	586
2004	502	2009	612

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B.Com (Hons) (2018 Batch) (Sem.-2)
BUSINESS STATISTICS
Subject Code : BCOM-GE-201-18

M.Code : 75830
Date of Examination : 12-07-22
Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

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2. SECTION-B consists of FOUR Sub-sections : Units-I, II, III & IV.
3. Each Sub-section contains TWO questions each, carrying TEN marks each.
4. Student has to attempt any ONE question from each Sub-section.

SECTION-A

1. Write briefly :

- a) What is inferential statistics?
- b) What is sampling distribution?
- c) What is frequency distribution?
- d) What is intercept in regression analysis?
- e) What is R-square?
- f) What is mean absolute deviation?
- g) What is decision and percentile?
- h) What is normal probability distribution function?
- i) What is conditional probability?
- j) What is the multiplication law of probability?



UNIT-I

- Q2. What is the importance of statistics? What are the features, limitations, and scope of statistics?
- Q3. Discuss the probability and non-probability sampling techniques.

UNIT-II

- Q4. What is the procedure to produce a sampling distribution of mean?
- Q5. Find the mean and standard deviation of the following data.

X	57	59	50	55	65	62	64	57	66	58
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UNIT-III

- Q6. The following data shows price and number of units sold at different price levels. Find the correlation between price and number of units sold and interpret the results.

Price	242	216	215	236	232	235	272
Number of units	23.9	23.0	22.9	28.8	29.2	26.4	24.8

- Q7. What is Regression? What is the principal of least square in regression analysis? What is the formula to calculate the regression coefficient?

UNIT-IV

- Q8. Solve the following probability problems :

- a) If $P(A \text{ and } B) = 0.4$ and $P(B) = 0.8$, find $P(A|B)$.
- b) If $P(A) = 0.7$ and $P(B) = 0.5$ and $P(A \text{ and } B) = 0.8$, find $P(A|B)$.

- Q9. What is Binomial Distribution? What are the essential properties of binomial distribution? What is the difference between binomial distribution and normal distribution?

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Total No. of Days

Total No. of Pages :02

B.Com. (Hons) (Sem.-2)

BUSINESS STATISTICS

Subject Code : BCOM-GE 201-18

M.Code : 75830

Date of Examination: 23-11-2023

Time : 3 Hrs.

Max. Marks : 60

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3. Each Sub-section contains TWO questions each, carrying TEN marks each.
4. Student has to attempt any ONE question from each Sub-section.

SECTION-A

1. Write briefly :
 - a) Discuss properties of standard deviation.
 - b) Define mode.
 - c) What is rank correlation?
 - d) Explain the purpose of classification and tabulation of data.
 - e) What is the chance that a non-leap year should have fifty-three Sundays?
 - f) Define regression.
 - g) What is least square method?
 - h) *"Diagrams help us visualize the whole meaning of a numerical complex data at a single glance". Explain the statement.*
 - i) Define ordinal data and interval data.
 - j) Discuss the properties of normal curve.

SECTION-B

UNIT-I

2. Discuss the term statistics and discuss its use in business and trade. Also point out its limitations.
3. Define the meaning and important features of systematic and stratified sampling.

UNIT-II

4. Evaluate an appropriate measure of dispersion for the following data :

Income (in Rs)	Less than 50	50-70	70-90	90-110	110-130	130-150	Above 150
No. of persons	54	100	140	300	230	125	51

5. Point out the importance of sampling in solving business problems. What are the basic principles on which sampling theory rests?

UNIT-III

6. Define correlation. Discuss its significance. Does correlation always signify causal relationship between two variables? Explain with illustrations.
7. From the following data, obtain the two regression equations :

Sales	91	97	108	121	67	124	51	73	111	57
Purchases	71	75	69	97	70	91	39	61	80	47

UNIT-IV

8. A bag contains 20 tickets marked with numbers 1 to 20. One ticket is drawn at random. Find the probability that it will be a multiple of a) 2 or 5, b) 3 or 5.
9.
 - a) What are the chief characteristics of Poisson distribution? Mention three business situations where Poisson model is applicable.
 - b) State the distinctive features of Poisson probability distribution. When does this tend to a normal distribution?

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B.Com.(Hons) (Sem.-2)

BUSINESS STATISTICS

Subject Code : BCOM-GE-201-18

M.Code : 75830

Date of Examination: 14-12-2024

Time : 3 Hrs.

Max. Marks : 60

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SECTION-A

1. Write briefly:

- a) Discuss the scope of statistics.
- b) What is the difference between primary and secondary data?
- c) Discuss the difference between probability and non-probability sampling.
- d) The intelligence quotients (IQ's) of 10 boys in a class are given below:

70, 120, 110, 101, 88, 83, 95, 98, 107, 100

Find the mean I.Q.

- e) Define coefficient of range with formula.
- f) What is linear and non-linear correlation?
- g) What is scatter diagram?
- h) Define standard deviation.

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- i) In a single throw with two uniform dice find the probability of throwing five.
- j) Define Nominal data.

SECTION-B

UNIT-I

2. "Statistics methods are most dangerous tools in the hand of inept" Discuss and explain the limitation of Statistics.
3. What is sampling? What are the essentials of a good sample? Name the various methods of sampling and explain them in brief.

UNIT-II

4. Find the value of mean, mode and median from the data given below:

Weight (in kg.)	93-97	98-102	103-107	108-112	113-117	118-122	123-127	128-132
No. of students	3	5	12	17	14	6	3	1

5. Explain with suitable example the term variation. What purposes does a measure of variation serve? Comment on some of the well-known measures of variation along with their respective merits and demerits.

UNIT-III

6. Find Karl Pearson's coefficient of correlation between the age and the playing habit of the people from the following information. Also mention what does your calculated 'r' indicate

Age Group	No. of people	No. of players
15 and less than 20	200	150
20 and less than 25	270	162
25 and less than 30	340	170
30 and less than 35	360	180
35 and less than 40	400	180
40 and less than 45	300	120

7. What is linear regression? Why are there, in general, two regression lines? When do they coincide? Explain the use of regression equation in economic enquiry.

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UNIT- IV

8. A committee of four has to be formed from among 3 economist, 4 engineers, 2 statisticians and 1 doctor.
 - i) What is the probability that each of the four professions is represented in the committee?
 - ii) What is the probability that the committee consists of the doctor and atleast 1 economist?
9. What are the main features of normal probability distribution? Can a normal probability distribution be fully determined if we know its mean and standard deviation?

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B.Com. (Hons) (Sem.-2)
BUSINESS STATISTICS
Subject Code : BCOM/GE201/18
M.Code : 75830

Time : 3 Hrs.

Date of Examination : 15-05-2024

Max. Marks : 60

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3. Each Sub-section contains TWO questions each, carrying TEN marks each.
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SECTION-A

1. Answer briefly:

- a) Frequency distributions
- b) Limitation of statistics
- c) Graphical representation of central tendency
- d) Significance of variance
- e) Scatter diagrams
- f) Regression coefficient
- g) Event probabilities
- h) Fitting of distributions
- i) Properties of a normal curve
- j) Quartile deviation

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SECTION-B

UNIT-I

2. List and discuss the various sources of data collection.
3. Discuss the differentiation between probability and non-probability sampling

UNIT-II

4. Find the median of the following data :

X	115-120	120-125	125-130	130-135	135-140	140-145	145-150
f	3	7	13	19	16	12	6

5. Find the standard deviation of the following series :

X	5-10	10-15	15-20	20-25	25-30	30-35	35-40
f	2	5	11	17	14	9	3

UNIT-III

6. Find the value of Y, for $X=500$, using regression analysis.

X	50	100	150	200	250	300	350
Y	20	40	80	120	180	200	220

7. What is rank correlation coefficient? Discuss its applications.

UNIT-IV

8. Discuss the probability laws of addition and multiplication. Give examples.
9. Differentiate between Normal, Binomial and Poisson probability distributions.

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Total No. of Pages : 02

Total No. of Questions : 09

B.Com.(Hons) (Sem.-2)
BUSINESS STATISTICS

Subject Code : BCOM-GE201-1B

M.Code : 75830

Date of Examination: 22-05-2025

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION A is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. SECTION B consists of **FOUR** sub-sections : Units-I, II, III & IV.
3. Each sub-section contains **TWO** questions each, carrying **TEN** marks each.
4. Student has to attempt any **ONE** question from each sub-section.

SECTION - A

1. Write briefly:

- a) Limitations of statistics.
- b) Data presentation.
- c) Descriptive statistics
- d) Positional averages
- e) Relation between standard deviation and variance.
- f) Linear correlation
- g) Rank correlation
- h) Properties of regression coefficient.
- i) Multiplicative law of probability.
- j) Probability distribution function.

SECTION - B

UNIT - I

2. What is meant by data collection? What is its purpose? Discuss its various methods.
3. Define sampling. Explain stratified and judgement sampling giving examples.

UNIT - II

4. a) Discuss the properties of variance.
- b) Briefly explain the various graphic presentations with respect to measures of central tendency.

5. Find out the coefficient of variance for the given data :

X	5	15	25	35	45	55	65	75
f	4	11	17	23	18	12	9	5

UNIT - III

6. a) Discuss the difference between correlation and causation. Give examples.
- b) What is the principle of least squares in regression?

7. Find out the values of Y for X=120 using regression analysis.

X	10	20	30	40	50	60	70	80
Y	6	10	12	18	22	34	46	52

UNIT - IV

8. Explain the concept of probability. Discuss the different approaches used for the calculation of probability.
9. Discuss and differentiate between Binomial and Poisson distribution.

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