

Only for 2021 to
2024 AD admitted
Students

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
May 2026

Full Marks: 60
Pass Marks: 30
Time: 3 Hrs.

BBA / BIM / BBM / Third Semester / STT 201: Business Statistics

Candidates are required to answer the questions in their own words as far as practicable.

Group "A"

Brief Answer Questions:

[10 × 1 = 10]

1. The values of lower and upper quartiles are 40 and 70 respectively, then calculate coefficient of quartile deviation.
2. The mean and coefficient of variation of a certain data are 20 and 30% respectively. Calculate standard deviation.
3. Give that quartile deviation = 20, 10th percentile = 30 and 90th percentile = 90, find the coefficient of kurtosis.
4. A bag contains 3 red, 2 black and 5 white balls. If two balls are drawn at random, what is the probability of getting both red balls.
5. If the covariance between X and Y variables is 18 and the variance of X and Y are 16 & 81 respectively, find the coefficient of correlation.
6. Obtain the regression equation of Y on X from the following information.

	X	Y
Mean	20	15
Standard Deviation	4	3
Correlation Coefficient (r)=0.7		

7. A random sample of 400 oranges was taken from a large basket and 70 of them were found to be bad. Find the standard error of the proportion of bad oranges.
8. For a moderately asymmetrical distribution, if the values of mean and median are 30 and 28, find the value of mode.
9. For a binomial distribution with $n = 4$ and $p = 0.45$, find $p(x = 2)$.
10. List out the types of random sampling techniques.

Group "B"

Short Answer Questions: (Attempt any FIVE Questions)

[5 × 3 = 15]

11. A random sample of 100 articles shows that the average diameter of articles is 0.354 with a standard deviation 0.048. Estimate the interval at 95% confidence level.
12. The mean of a set of 100 observations were found to be 40. On checking it was found that two observations, were wrongly taken as 30 and 72 instead of 3 and 27. Calculate the corrected mean.
13. If a random variable follows Poisson distribution and $\lambda = 3$. Find $P(X = 0)$ and $P(X = 1)$.

14. Sample of 50 mobile of two brands Samsung and Apple are taken and average running life (years) of each recorded as shown below.

	Samsung	Apple
Average life in years	11	12
variance	25	36

Which of the two brands show greater uniformity in life?

15. Calculate an appropriate measure of central tendency from the following distribution and support for your choice of measure.

Monthly income (in Rs.)	No. of Families
Below 1000	50
1000-1999	500
2000-2999	555
3000-3999	100
4000-4999	30
5000 & above	15

16. Calculate the five number summary from the following data and comment on the shape of the distribution.

39, 26, 15, 8, 70, 11, 45, 60, 20, 32, 52

Group "C"

Long Answer Questions: (Attempt any THREE Questions)

[3 × 5 = 15]

17. From the following income distribution:

Income (Rs '000)	0 - 4	5 - 9	10 - 14	15 - 19	20 - 24
No of persons	160	200	430	140	70

Compute lowest income of richest 10% of the people.

18. Two salesmen A and B are working in a certain district. From a sample survey conducted by the Head Office, the following results were obtained. Test whether there is any significant difference in the average sales between the two salesmen at 5% level of significance:

	A	B
No. of Salesmen	20	18
Average sales (in Rs)	170	205
Standard deviation (in Rs)	20	25

19. Calculate Karl Pearson's coefficient of skewness from the following income distribution of hundred families.

Income (Rs.'00)	0 - 20	20 - 40	40 - 60	60 - 80	80 -100
No. of families	13	21	27	23	16

20. The life of electronic tubes of a certain type may be assumed to be normally distributed with mean 155 hours and standard deviation 19 hours. What is the probability that the life of a randomly chosen tube is less than 117 hours.

Group "D"

Comprehensive Answer Questions:

[20]

21. The data in promotional expenditures and sales on a newly launched product are given below:

Promotional expenses in (Rs '000)	4	4	6	10	10	12	15
sales in (Rs '00,000)	16	20	18	24	20	22	25

- Calculate the two regression coefficients from the above data of expenses and sales.
- Calculate the correlation coefficient between promotional expenditure and sales and test the significance of the calculated value of correlation coefficient.
- Find two regression lines and estimate the expected sales if the promotional expenses is Rs 20,000.

[8+8+4]

