

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
Model Question 2026

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

BTTM / BHM / Fifth Semester / STT 301: Statistics
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Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

Brief Answer Questions:

(10 × 1 = 10)

1. Define qualitative variable with an example.
2. In an asymmetrical distribution, if the values of mean and median are 80 and 60 respectively, find the value of mode.
3. Find the value of median: 24, 21, 25, 22, 27, 31, and 29.
4. If regression coefficient Y on X (b_{yx}) = 0.60 and regression coefficient X on Y (b_{xy}) = 0.90, find the correlation coefficient.
5. The year of origin of the following straight line trend equation of profits is 2018. $Y=25+1.5x$, estimate the profit for the year 2025.
6. Find the combined mean marks of the students from the following information.

	Section A	Section B
Number of students	50	60
Average marks	85	75

7. The first and third quartiles are 6 and 16 respectively, calculate the quartile deviation.
8. Give a concept of probability sampling.
9. Given that the quartile deviation is 103 and difference between P_{90} and P_{10} is 372, then find coefficient of kurtosis.
10. Find the regression coefficient Y on X, if correlation coefficient between X and Y is 0.52, standard deviation of X is 4 and standard deviation of Y is 6.

Group "B"

Short Answer Questions: (Attempt any SIX Questions)

[6 × 5=30]

11. Explain the application of statistics in hotel management and tourism management.
12. Twenty balls are numbered from 1 to 20. If one ball is drawn at random, what is probability that the ball drawn is (a) multiple of 4 or 7 (b) multiple of 4 or 5?
13. Compute the seasonal indices by the method of simple average for the following data.

Quarter \ Year	Q1	Q2	Q3	Q4
2022	75	86	90	100
2023	60	65	72	78
2024	54	63	66	72
2025	59	80	85	93

14. Draw a pie chart from the following data:

Items	Expenditure (000Rs)
Food	16
Clothing	8
Rent	6
Light and fuel	2
Others	6

15. From the following income distribution, find the lowest income of richest 10 % of the people.

Income(RS 000)	0-5	5-10	10-15	15-20	20-25
No of persons	16	20	43	14	7

16. The following table represents the marks of 100 students. If the mode value is 48, find the missing frequencies.

Marks	0-20	20-40	40-60	60-80	80-100
No of students	14	-	27	-	15

17. The following information was obtained from two firms A and B:

	Firm A	Firm B
Average weekly wages	Rs. 1585	Rs. 1675
Standard deviation	Rs. 50	Rs.60

Find the coefficient of variations regarding to weekly wages of workers of two firms. In which firm is there greater variability in individual wages?

Group "C"

Comprehensive Answer Questions: (Attempt any TWO Questions)

[2 × 10=20]

18. The data related to sales and promotion expenditure on a newly launched product for six years are given below:

Year	2077	2078	2079	2080	2081	2082
Sales(000Rs)	16	20	18	24	20	22
Promotion Expenses (000 Rs)	4	4	6	10	10	12

a. Calculate the two regression coefficients.

b. Estimate the expected sales if the promotional expenses is Rs. 20,000.

c. Find the coefficient of correlation and interpret the result.

19. Find the Karl Pearson's coefficient of skewness from the following income distribution. Also, interpret the result.

Income (000Rs)	0-20	20-40	40-60	60-80	80-100	100-120
workers	12	18	27	22	15	6

20. The following data shows the yearly profit (in millions Rs) of a company.

Year	2019	2020	2021	2022	2023	2024	2025
Profit	12	14	15	18	22	24	25

a. Fit a straight line trend by the method of least square.

b. Calculate the trend values.

c. Estimate the profit for the year 2026.

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