



I Semester Degree Examination, February/March 2024
(F+R) (NEP)
(Open Elective)
STATISTICS
Business Statistics

Time : 2½ Hours

Max. Marks : 60

- Instructions :** 1) Scientific calculators are **permitted**.
2) Statistical tables and graph sheets are provided on request.

PART – A

Answer **any four** questions (2 marks each) :

(4×2=8)

1. Calculate arithmetic mean for the following data :
8, 9, 15, 22, 17, 10, 17.
2. What do you mean by skewness ?
3. What are the types of correlation ?
4. Define regression. Write down two regression equations.
5. What is price index number ? Write the formula for Paasche's price index number.
6. Define time series with an example.



PART – B

Answer **any four** questions (5 marks each) :

(4×5=20)

7. Define Geometric mean and its applications.
8. Find the median for the following frequency distribution.

X	70	80	95	120	150	180	200
f	14	26	30	45	20	10	5

9. Calculate Spearman's rank correlation coefficient for the following data :

X	5	8	4	2	7	1	6	3
y	7	5	3	1	2	8	4	3



10. Find the line of regression X on Y for the following data :

Husband's age (X)	30	28	40	27	35
Wife's age (Y)	23	21	32	26	30

11. Explain the uses and limitations of index numbers.

12. Calculate the trend values by the method of 3 yearly moving average.

Year (X)	2000	2001	2002	2003	2004	2005
Value (Y)	400	420	430	455	440	460



PART – C

Answer any four questions (8 marks each) :

(4×8=32)

13. a) For any two positive numbers show that $AM \geq GM$.

b) Define mode and calculate mode for the following data :

(4+4)

No. of children	0	1	2	3	4	5
No. of couples	10	12	25	17	8	3

14. Calculate Karl Pearson's coefficient of skewness for the given distribution :

IQ (level)	No. of Children
70–80	10
80–90	14
90–100	19
100–110	25
110–120	15
120–130	10
130–140	7

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15. a) Distinguish between correlation and regression.

b) The following data gives the age of a motor cycle and the annual maintenance cost over a period. Find Pearson's co-efficient of correlation and interpret the same.

(4+4)

Age (years)	4	6	8	10
Maintenance (in '000's Rs.)	5	8	12	14



- 16. a) Write the properties of regression coefficients.
- b) Find the most probable value/marks in statistics who scored 50 marks in accountancy. (4+4)

Subject	Arithmetic Mean	Variance
Accountancy (X)	40	16
Statistics	55	25
Coefficient of correlation	0.8	

- 17. a) Explain the steps involved in the construction of consumer price index number.
 - b) How do you compute the seasonal indices using ratio to moving average method ? (4+4)
18. Show that Fisher price index number satisfies time reversal test and factor reversal test for the following given problem. 8

Commodity	Price	Quantity	Price	Quantity
	(2020)		(2021)	
A	10	3	14	4
B	12	8	16	10
C	8	10	10	10
D	14	7	12	10
E	16	4	18	6

