

17. Find out the regression equations x on y and y on x by deviations of X series from 5 and of Y series from 7.

x	6	2	10	4	8
y	9	11	5	8	7

18. Elucidate the properties of normal distribution.
19. Explain the procedure of testing statistical hypotheses.
20. Fit a straight line trend to these figures of production of sugar factory and plot these figures on a graph.

Year	1997	1998	1999	2000	2001	2002	2003
Production	80	90	92	83	94	99	92

(For candidates admitted from 2016–2017 onwards)

M.A. DEGREE EXAMINATION, NOVEMBER 2022.

Economics

STATISTICS

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$)

Answer ALL the questions.

1. Find geometric mean. 85, 70, 15, 75, 40.
2. Calculate range and its coefficient: 200, 210, 208, 160, 220, 180, and 280.
3. Define correlation and values of correlation.
4. What is multicollinearity?
5. Define probability.
6. Explain mutually exclusive events.
7. Define standard error.
8. State one-tailed and two-tailed tests of hypothesis.

9. Give any two uses of index numbers.
10. State the components of time series.

SECTION B — (5 × 5 = 25)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the properties of good measure of variation.

Or

- (b) Find the median and mean deviation of the following data:

Size	0-10	10-20	20-30	30-40	40-50	50-60	60-70
F	7	12	18	25	16	14	8

12. (a) Describe the advantages and limitations of multiple correlation analysis.

Or

- (b) Explain the importance of regression lines.

13. (a) State the addition and multiplication theorem of probability.

Or

- (b) The bag contains 5 white and 3 black balls. Two balls are drawn at random one after the other without replacement. Find the probability that both balls drawn are black.

14. (a) What are the uses of χ^2 test?

Or

- (b) Explain the properties of sampling distribution.

15. (a) Construct the Fisher's ideal index for the following data:

Commodities	2002		2003	
	Quantity	Price	Quantity	Price
Wheat	2	10	5	12
Oats	5	15	3	10
Pepper	4	20	3	20
Sugar	2	10	6	10
Salt	3	8	2	8

Or

- (b) Explain consumer price index number and its usefulness.

SECTION C — (3 × 10 = 30)

Answer any THREE questions.

16. The following table shows that monthly expenditure of students of a university on morning breakfast; Calculate coefficient of variation.

Expenses	78-82	73-77	68-72	63-67	58-62	53-57	48-52
No. of students	2	6	7	12	18	13	9
Expenses	43-47	38-42	33-37				
No. of students	7	4	2				