

(6 pages)

NOVEMBER 2024

72268/250E3A

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer any TEN questions in about 30 words each.

1. Define statistics as a plural noun.
2. When is mode preferred over other forms of average?
3. What are the properties of an ideal average?
4. Solve Mode, If mean = 30, median = 32.
5. What is meant by limited degree of correlation?
6. When correlation coefficient is zero, what is the nature of the regression lines?
7. Write a note on scatter diagram.
8. What is secular trend?
9. Why index numbers are called economic barometers?

15. Draw a Lorenz curve from the following data to study the extent of dispersion graphically

Salary (in Rs.)	100	150	200	250	300
No. of workers	20	10	8	10	2

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

X	35	37	38	42	44	46	51	54	55	56
Y	40	32	39	42	41	31	50	52	46	45

17. Using three yearly moving average method, determine the trend.

Year	2013	2014	2015	2016	2017
Production	21	22	23	25	24
Year	2018	2019	2020	2021	2022
Production	22	25	26	27	26

10. What are the considerations in the selection of the base year for index number construction?

11. Define Type I and Type II errors.

12. What is analysis of variance and where is it used?

SECTION B — (5 × 5 = 25 marks)

Answer any FIVE questions in about 200 words each.

13. Explain the various types of Diagrammatic presentation of Statistical data.

14. The frequency distribution of marks obtained by in statistics obtained by 100 in a class is given below :

Marks	20-29	30-39	40-49	50-59
Number of students	7	11	24	32
Marks	60-69	70-79	80-89	90-99
Number of students	9	14	2	1

Draw ogives (less than and more than type) for this distribution and use it to determine the median.

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18. The score of 10 candidate's performance after training are given below. Test whether the given training is effective

Prior	84	48	36	37	54	69	83	96	90	65
After	90	58	56	49	62	81	84	86	84	75

19. Explain the procedure followed in testing a hypothesis.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions in about 500 words each.

20. Explain the Sources of Secondary Data with its merits and limitations.

21. The following data related to the scores obtained by 9 salesmen of a company in an intelligence test and their weekly sales in Rs (‘000)

Salesman	A	B	C	D	E	F	G	H	I
Test scores	50	60	50	60	80	50	80	40	70
Weekly sales	30	40	60	50	60	30	7	50	60

(a) Obtain the regression equation of sales on intelligence test scores of the salesman.

(b) If the intelligence test score of a salesman is 65, what would be his expected weekly sales.

22. From the following data showing the salaries and allowances of 12 persons, calculate the Karl Pearson's coefficient of correlation

Salary :	439	467	535	580	388	702
Allowance :	148	148	190	130	101	203
Salary :	245	465	456	453	428	477
Allowance :	106	143	149	135	165	182

23. Compute (a) Laspeyre's (b) Paasche's and (c) Fisher's index number.

Item	Price		Quantity	
	Base year	Current year	Base year	Current year
A	6	10	50	50
B	2	2	100	120
C	4	6	60	60
D	10	12	30	25

24. From the following data find out whether there is any relationship between gender and preference of colour :

Colour	Males	Females	Total
Red	10	40	50
Blue	70	30	100
White	30	20	50
Green	30	20	50
Total	140	110	250

Chi - square table value for $v = 2$, at 5% level of significance is 5.99.