

21. For the following data find the Karl Pearson's co-efficient of skewness.

Measurement:	10	11	12	13	14	15
Frequency:	2	4	10	8	5	1

22. Find the regression equation of y on x and x on y for the following data:

x :	10	12	13	16	17	20	25
y :	10	22	24	27	29	33	37

23. A bag 'A' contain 2 white and 3 red balls and bag 'B' contain 4, white and 3 red balls, one ball is drawn at random from one of the bags and is found to be red. Find the probability that it is drawn from bag B.

24. From the given data, relating to sale of shoe compute trend. Find short term fluctuation by moving average method assuming a 4-year and plot the original values and the trend on a graph paper.

Year:	1967	1968	1969	1970	1971	1972
Sales (1000 units)	75	60	55	60	65	70

Year:	1973	1974	1975	1976	1977	1978
Sales (1000 units)	70	75	85	100	70	60

Reg. No. :

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Allied Paper II – STATISTICAL METHODS

(For B.C.A. candidates)

Time : Three hours

Maximum : 100 marks

SECTION A – (10 × 2 = 20 marks)

Answer any TEN questions.

- From the following data, find the median
4, 51, 7, 52, 8, 53, 54, 24, 78, 65, 47, 12, 69, 17, 68, 13, 67, 37, 18, 79, 58
- Calculate Harmonic mean for the following data:
5, 10, 15, 20, 25
- Define co-efficient of variation.
- What is meant by Skewness?
- Write the formula for correlation coefficient.
- Write the formula for spearman rank correction
- Give any two uses of regression analysis.
- A card is drawn from a well shuffled pack of playing cards. What is the probability that it is either spade or an ace?

9. If A and B are independent $P(A) = \frac{1}{3}$ and

$$P(B) = \frac{1}{4}, \text{ find } P(A \cap B).$$

10. State Baye's Theorem.

11. Write the component of time series

12. What are the demerit of moving coverage method in time series.

SECTION B — ($5 \times 7 = 35$ marks)

Answer any FIVE questions.

13. Calculate combined mean for the following data.

(a) $\bar{X}_1 = 40, \bar{X}_2 = 60, n_1 = 50, n_2 = 100$

- (b) Calculate geometric mean for the following data:

5, 10, 15, 20

14. Calculate co-efficient of variation for the following data

55, 54, 52, 53, 56, 58, 52, 50, 51, 49.

15. Calculate Q_1 and Q_3 for the following data, where Q_1 is the First Quartile and Q_3 is the third Quartile.

Cl.	130-134	135-139	140-144	145-149	150-154	155-159	160-164
F.	5	15	23	24	17	10	1

16. Calculate correlation coefficient from the following data

$$N = 10, \Sigma x = 140, \Sigma y = 150, \Sigma(x-10)(y-15) = 60,$$

$$\Sigma(y-15)^2 = 215, \Sigma(x-10)^2 = 180.$$

17. From a group of 4 Indians, 3 Nepalis, 5 Americans, four people are selected. Find the probability it will consist of:

(a) Two Indians and Two Nepalis

(b) One Indian, One Nepali and Two American.

(c) Four Americans

18. Prove that for any two events A and B

$$P(A \cup B) = P(A) + P(B) - P(A \cap B).$$

19. Construct a 5 year moving average for the following data.

Year:	1988	1989	1990	1991	1992	1993	1994	1995	1996
Sales in (1000 units)	50	36	43	44	38	38	32	38	41

SECTION C — ($3 \times 15 = 45$ marks)

Answer any THREE questions.

20. Find the mean and median for the following data.
Wages in Rs. 0-10 10-20 20-30 30-40 40-50 50-60 60-70 70-80
Frequency: 12 18 35 42 50 45 20 8