



SE – 519

II Semester B.B.A. Examination, June/July 2026
(SEP 2025 – 2026) (Freshers)
BUSINESS ADMINISTRATION
BBA 2.4 : Quantitative Business Techniques

Time : 3 Hours

Max. Marks : 80

Instruction : Answer *should* be written in *English only*.

SECTION – A

Answer **any seven** questions from the following. **Each** sub-question carries **two** marks. **(7×2=14)**

1. a) What is correlation ?
- b) What do you mean by positive correlation ?
- c) Give the meaning of 'Regression Lines'.
- d) Calculate the correlation co-efficient using regression coefficients values 0.5 and 1.25.
- e) What do you mean by 'Time Series' ?
- f) What is probability ?
- g) What is Interpolation ?
- h) List out any two assumptions of interpolation.
- i) Give the meaning of a Random Experiment.
- j) Given $P(A) = \frac{1}{3}$ and Find $P(\bar{A})$.

P.T.O.





SECTION – B

Answer **any three** questions from the following. **Each** question carries **eight** marks.

(3×8=24)

2. a) In a distribution, n (no. of observation) is 5 and r (coefficient correlation) is 0.7.

Calculate probable error and comment on results.

- b) From the following data compute the co-efficient of correlation between X and Y .

A.M of X is 14.6 and A.M of Y is 12.7.

Sum of squares of deviation from Arithmetic mean of $X = 115.96$

Sum of squares of deviation from Arithmetic mean of $Y = 59.04$

Summation of product of deviation of X and Y series from their respective means is 53.95 No. of pairs is 10.

3. Calculate the trend values using 3 and 5 yearly moving average.

Years	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Values	86	63	45	58	43	57	98	120	100	150

4. To study the relationship between expenditure on accommodation X and expenditure on food and entertainment Y an enquiry into 50 families gave the following results. $\sum X = 8,500$, $\sum Y = 9,600$, $\sigma_x = 60$, $\sigma_y = 20$ and $r = 0.6$. Estimate the expenditure on food and entertainment when expenditure on accommodation is ₹ 2000.

5. From the following information related to sales estimate sales in the year 2026 using Binomial Expansion method.

Years	2020	2021	2022	2023	2024	2025
Sales (in 000's)	940	952	907	843	798	756

6. Two dice thrown once simultaneously. Find the probability of getting.

- The sum as 5
- Identical numbers
- The sum as 5 (or) Identical numbers.



SECTION – C



Answer **any three** questions from the following. **Each** question carries **fourteen** marks.

(3×14=42)

7. Following are the results of an examination. Calculate the Coefficient of Correlation between age and success of candidate in the examination and calculate probable error.

Age of candidates (Years)	20 – 21	21 – 22	22 – 23	23 – 24	24 – 25	25 – 26
Candidates appeared	120	100	70	40	10	5
Successful candidates	72	55	35	18	4	1

8. The following are the marks in management (X) and the marks in marketing (Y) of 10 students in degree examinations. Find the coefficient of rank correlation.

X	43	96	74	38	35	43	22	56	35	80
Y	30	94	84	13	30	18	30	41	48	95

9. The following data gives the demand (X) and Supply (Y) in a market for 11 days.
- Obtain the regression equation of X on Y and Y on X.
 - Calculate the coefficient of correlation from the regression coefficients.
 - Calculate Y when X is 50 and X when Y is 88.

X	61	72	73	73	63	84	80	66	76	74	72
Y	40	52	59	53	61	58	56	48	58	50	50

10. Below given are the wages earned by the workers per week in a certain factory.

Weekly income (upto)	10	15	20	25	30
No. of workers	40	160	220	340	440

Calculate the number of workers earning between ₹ 18 and ₹ 23 by using Newton's Method of Advancing Differences.

1. Fit a straight line trend by the method of least square and tabulate the trend values. Plot the values on graph and find the sales for the year 2026. Also Prove that $\sum (Y - Y_c) = 0$.

Sales	2018	2019	2020	2021	2022	2023	2024	2025
Values (Y)	38	40	65	72	69	60	87	95