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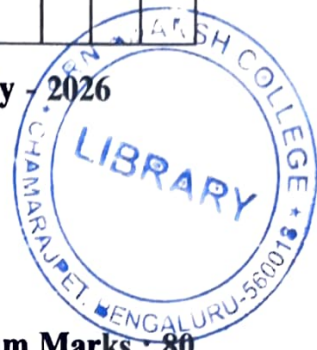
DCBC412

Reg. No.

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IV Semester B.Com. (Regular) Degree Examination, June/July - 2026

COMMERCE

Quantitative Analysis For Business Decisions-II
(SEP Scheme)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

Answer should be written in English.

SECTION - AAnswer any FIVE of the following sub-questions. Each sub-question carries 2 marks.
(5×2=10)

1.
 - a) State any two types of correlation.
 - b) Give the meaning of probable error.
 - c) Calculate the regression Co-efficient if $\gamma = 0.8$, $\sigma_x = 5$ and $\sigma_y = 7$.
 - d) What do you mean by regression?
 - e) Define time series.
 - f) What is meant by extra polation?
 - g) Give the meaning of level of significance.
 - h) What is positive association?

SECTION - B

Answer any FOUR of the following questions. Each question carries 5 marks.

(4×5=20)

2. The following data provides the ranks of Ten students in two subjects
Statistics: 9 6 1 2 3 7 10 5 8 4
Maths : 1 5 8 2 6 7 10 4 9 3
Calculate rank correlation.

[P.T.O.]



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3. Given that the means of X and Y are 65 and 67, their standard deviations are 2.5 and 3.5 respectively and the coefficient of correlation between them is 0.8. Obtain the best estimate of X when $Y=70$.

4. Calculate trend values assuming 5 yearly moving average from the following data.

Year	: 2012	2013	2014	2015	2016	2017
Value	: 53	79	76	66	69	94
Year	: 2018	2019	2020	2021	2022	2023
Value	: 105	87	79	104	97	72

5. Estimate the missing data from the following using binomial expansion method

Year	: 2016	2017	2018	2019	2020	2021
Exports (in Crores):	2100	2300	?	2800	3000	3500

6. In a set of random numbers the digit 0, 1, 2, ..., 9 were found to have the following frequencies.

Digit	: 0	1	2	3	4	5	6	7	8	9
Frequencies:	43	32	38	27	38	52	36	31	39	24

Test whether digits were equally distributed in equal numbers in the tables from which they were chosen. The degree of freedom at 5% level of significance is 16.92.

7. Extrapolate the sales for the year 2023

Year	: 2018	2019	2020	2021	2022
Sales (in lakhs):	200	300	600	900	1500

SECTION - C

Answer any **THREE** of the following questions. Each question carries 15 marks.

(3×15=45)

8. Calculate Co-efficient of correlation between percentage of pass and failures from the following data. Also obtain probable error.

No. of Students	: 80	60	90	70	50	40
No. of Students Passed :	48	30	45	56	45	30

9. Given the following values of X and Y.

X	: 3	5	6	8	9	11
Y	: 2	3	4	6	5	8

Find the regression equation of i) x on y and y on X and estimate x when y is 12, and y when x is 14.



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10. For the following table:

- Fit a straight line trend by the method of least squares.
- Estimate the income for the year 2023.

Year	:	2015	2016	2017	2018	2019	2020	2021
Income(In Rs. 000)	:	300	700	600	800	900	700	1000

11. Following are the marks obtained by 190 students in a certain examination . Find the number of students who secured less than 45 marks.

Marks	:	30-40	40-50	50-60	60-70	70-80
No. of Students	:	31	42	51	35	31

12. A survey among women was conducted to study the family life. The observations are as follows.

	Happy	Not Happy	Total
Educated	70	30	100
Not Educated	60	40	100
Total	130	70	200

Test whether there is any association between family and education. The degree of freedom at 5% level of significance is 3.84.

SECTION - D

Answer the following. This question carries 5 marks.

(1×5=5)

13. Fit a straight line trend with imaginary figures and show it graphically.
