QP CODE

M1036

Enrollment Number: ……

Name: ……

B.COM DEGREE EXAMINATIONS, OCTOBER 2025

First Semester

B.Com

B21CM02DC – Business Mathematics and Statistics

(Supplementary/Improvement)

(2023 July Admissions)

Time: 3 Hours **Max Marks: 70**

Section A

Answer any ten of the following questions in a word or sentence each. Each question carries 1 mark.

1. Calculate simple interest for ₹10,000 at a rate of 12% for 6 months.
2. What is the formula for calculating the future value of an investment with continuous compounding?
3. Find the ratio of 200 meter and 3kms.
4. A matrix in which all the diagonal elements are equal is called what?
5. What is the total number of elements in a 2×3 matrix?
6. Calculate arithmetic mean from the data showing marks of students in a class in the subject accounting. 42,52,51,47,61,57,63,71,54,62
7. What is miscellaneous average?
8. Give the formula for Median in a continuous series.
9. Define Dispersion
10. Give an example of relative measure of deviation.
11. Give the formula for quartile deviation.
12. When the variables move in the same direction, then that correlation is termed as what?
13. In regression analysis, the variable whose value is to be predicted is called what?
14. What statistical tool is used to measure changes in group of related variables over time?
15. From where did the data for consumer price index numbers should be collected?

(1X10=10)

Section B

Answer any five of the following questions in two or three sentences each. Each question carries 2 marks.

16. Find the compound interest on ₹ 4000 at 8% per annum for 3 years.
17. The ratio between two quantities is 3:5 If the first quantity is 45 find the other quantity.

18. Given the matrices A = $\begin{bmatrix} 2 & 3 \\ 5 & 4 \end{bmatrix}$ and B = $\begin{bmatrix} 5 & -9 \\ 2 & 3 \end{bmatrix}$ Find A + B.
19. What is Symmetric matrix?
20. State any two requisites of a good average.
21. If the mean and median of a moderately asymmetrical series are 26.8 and 27.9 respectively, what would be its most probable mode?
22. Differentiate relative and absolute measure of Dispersion.
23. What is meant by No correlation?
24. Find the coefficient of Range from the following values.

    25,32,85,32,42,10,20,18,28

25. Give the formula for Fisher's Ideal Number.

(2X5=10)

Section C

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

26. Find the compound interest on ₹8000 for 4 years if interest is payable half yearly for the first 3 years at the rate of 8% per annum and for the fourth year, the interest is payable quarterly at the rate of 6% per annum.

27. Hema and Hima have invested in the ratio 6: 4. Together they invested a total amount of ₹ 86000, then find each one's individual investment.

28. Mr. Ron deposits at the end of every year ₹ 10,000 in a bank which pays 12% compound interest per annum, for 8 years. What will be the total amount standing to his credit at the end of 8^{th} year.

29. Find the harmonic mean from the following data

Class	10-20	20-30	30-40	40-50	50-60
Frequency	4	6	10	7	3

30. Calculate Karl Pearson's correlation coefficient between X and Y from the following data:
    a. n=10 $\Sigma x=35$ $\Sigma x^2=203$ $\Sigma y=28$ $\Sigma y^2= 140$ $\Sigma xy=168$

31. You are given the following data

	X	Y
Arithmetic Mean	36	85
Standard Deviation	11	8

Correlation Coefficient between x and y = 0.66

Find the regression equation x on y and estimate the value of x when y = 75

32. If r= .89, Probable error = .023 find the value of n.

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33. From the following data calculate price index by simple aggregate method

Commodity	Price 2007	Price 2010
A	20	25
B	30	30
C	10	15
D	25	35
E	40	45
F	50	55

(5X4=20)

Section D

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

34. If $A=\begin{bmatrix}4 & 1\\ 6 & 0\end{bmatrix}$ $B=\begin{bmatrix}2 & 0\\ -1 & 6\end{bmatrix}$ $C=\begin{bmatrix}5 & -2\\ -5 & 4\end{bmatrix}$

Find 2A – 3B + 4C.

35. From the following data compute arithmetic mean by step deviation method

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No.of students	5	10	25	30	20	10

36. From the following data calculate Standard deviation

Class	5-10	10-15	15-20	20-25	25-30	30-35	35-40
Frequency	10	14	40	60	50	46	20

37. Calculate Index number of Price for 2009 on the basis of 2008, from the data given below:

Commodities	Weight	Price (2008)	Price (2009)
A	40	16	20
B	25	40	60
C	5	2	2
D	20	5	6
E	10	2	1

(15X2=30)