



II Semester B.B.A. Examination, October/November 2022
(NEP Scheme)

BUSINESS ADMINISTRATION
Paper – 2.3 : Business Mathematics

Time : 2½ Hours

Max. Marks : 60

Instruction : Answers should be written only in English.					
50	10	11	9	7	5

SECTION – A

Answer any five sub-questions. Each question carries 2 marks. (5x2=10)

1. a) What is an Equation ?
- b) Solve for 'x' : $4x - 20 = 0$.
- c) What is the order of matrix ?

$$A = \begin{bmatrix} 2 & 3 \\ 4 & 1 \end{bmatrix}$$
- d) What is Simple Interest ?
- e) Find the 4th proportion of 10, 20 and 30.
- f) What is Median ?
- g) What is Regression ?



80	70	60	50	40	30	20	Age
3	51	140	153	155	81	3	No. of persons

SECTION – B

Answer any three questions. Each question carries 5 marks. (3x5=15)

2. Solve for 'x' by formula method, $x^2 + 9x + 20 = 0$.

3	23	22	21	Price (in ₹)
19	19	20	20	Demand (in 000 units)

3. If $A = \begin{bmatrix} 2 & 0 & -4 \\ -6 & 2 & 8 \end{bmatrix}$, $B = \begin{bmatrix} 8 & 4 & 2 \\ 0 & 2 & 6 \end{bmatrix}$

Find :

- i) $3(A - B)$
- ii) $5(B - A)$.



4. If it is given that $\log 2 = 0.3010$, $\log 3 = 0.4771$. Find $\log 8$, $\log 6$.
5. The difference between BD and TD on a bill due after 6 months @ 4% p.a. is Rs. 24. Find bill amount, BD and TD.
6. Calculate Median value :

Size	45	46	47	48	49	50
Frequencies	5	7	9	11	10	3

SECTION – C

Answer **any three** questions. **Each** question carries **8** marks. **(3×8=24)**

7. The weekly wages of 30 persons consisting men and women amount to ₹ 3,800. Each man receives ₹ 140 and each women ₹ 100 as wages per week. Find the number of men and women.
8. Solve for x and y by using Cramer's Rule.
 $6x + 5y = 2$
 $4x - 3y = 14$.
9. Compute QD and its co-efficient from the following data :

Age	20	30	40	50	60	70	80
No. of persons	3	61	132	153	140	51	3

10. Calculate Karl Pearson's correlation co-efficient from the following data :

Price (in ₹)	21	22	23	24	25	26	27	28	29
Demand (in 000' units)	20	19	19	17	17	16	16	15	14



11. Formulate both the Regression lines from the following data. Predict Y when X = 50 and X when Y = 25.

X	40	32	38	42	36	46
Y	30	35	40	36	28	35

SECTION – D

12. Answer **any one** of the following. Case-study carrying 11 marks. (1×11=11)

a) In a college 30% of the students are Hindus, 20% are Muslims, 25% are Jains and the rest are Christians. If there are 10 Jain students in the class, find the number of other students.

OR

b) A manufacturer allows a discount of 10% on the listed price of an article and still makes a profit of 8% on cost. Find the percentage of increase in the list price over the cost. What is the list price of an article sold at Rs. 198 ?



SECTION – B

Answer any three questions. Each question carries 5 marks.

2. Solve for 'x' by hit and trial method, $x^2 + 9x + 20 = 0$

3. If $A = \begin{bmatrix} 2 & 0 & -4 \\ -6 & 2 & 8 \end{bmatrix}$, $B = \begin{bmatrix} 3 & -1 & 2 \\ 0 & 2 & 8 \end{bmatrix}$

Find:

i) $3(A - B)$

ii) $5(B - A)$