

BOARD OF INTERMEDIATE EDUCATION, KARACHI

INTERMEDIATE EXAMINATION

MODEL PAPER 2026

BUSINESS MATHEMATICS PAPER – I

(Commerce Group – Regular & Private)

Time: 1 hour 45 minutes

Max. Marks: 40

SECTION ‘B’

(SHORT-ANSWER QUESTIONS)

(Marks : 20)

NOTE:

Answer any **Five** part questions from this Section. All part questions carry equal marks. Use of scientific calculator is allowed.

2. i) If 16 men paint 8 houses in 7 days. How many houses can 5 men paint in 14 days?
- ii) Perform the following binary operations:
- a) $1011 + 1001 - 111$ b) 1001×101
- iii) Find the compound interest and accumulate amount on Rs.60,000 for 5 years at 7% annum compounded quarterly.
- iv) Find the inverse of the matrix $A = \begin{bmatrix} 2 & -8 \\ 3 & 6 \end{bmatrix}$.
- v) Convert the binary number 1011_2 to its equivalent decimal number.
- vi) An item is sold for Rs.1200/-. A profit of 25% is obtained. Find the cost price of item and amount of the profit.
- vii) Find the equation of straight line passes through the point $(2, 3)$ with slope $= 4$. Also find x – intercept and y – intercept.
- viii) Solve the equation: $\frac{5}{6}x + 1 = \frac{2}{3}x + 2$.

SECTION ‘C’

(DETAILED-ANSWER QUESTIONS)

(Marks : 20)

NOTE:

Answer any **Two** questions from this Section. All questions carry equal marks.

3. a) For $A = \begin{bmatrix} 4 & -3 & 2 \\ 2 & 1 & -1 \\ 3 & 4 & 5 \end{bmatrix}$, solve $|A|$.
- b) Solve the following simultaneous equations by Cramer’s Rule:
- $$x + 2y = 6, \quad 2x + 7y = 3$$
4. a) For the equation $x^2 + 5x + 6 = 0$, find the direction and vertex of the parabola.
- b) Distribute Rs.120,000 among three partners A, B and C such that $A : B = 1 : 2$ and $B : C = 3 : 1$
5. Find the sum and present value of the annuity of Rs.8000/- invested at the end of each year for 10 years at the rate of 10% compounded annually.

-----XXXXXXXXXX-----

BUSINESS MATHEMATICS PAPER – I

(Commerce Group – Regular & Private)

Max. Marks: 10

Time: 15 minutes

Marks : 10

NOTE:

- i) This section consists of 10 part questions and all are to be answered. Each part question carries 1 mark.
- ii) Do not copy the part questions in your answer script. Write only the answer in full against the proper number of the question and its part. Use of scientific calculator is allowed.

1. Choose the correct answer for each from the given options:

i) In binary number system $1+1=$:

$$^* 2 \quad \quad \quad ^* 1 \quad \quad \quad ^* 0 \quad \quad \quad ^* 10_2$$

ii) $(25)^{\frac{1}{2}} \times (8)^{\frac{1}{3}} \times (2)^2 :$

$$* \quad 200 \quad * \quad 120 \quad * \quad 400 \quad * \quad 40$$

iii) 90 is 30% of:

* 360 * 400 * 300 * 1200

iv) If $a:b=2:3$ and $a:c=2:4$, then $b:c=:$

$$* \quad 1:2 \quad * \quad 2:5 \quad * \quad 3:2 \quad * \quad 3:4$$

v) If selling price of a chair is Rs.700 and profit is Rs.250, then cost price of chair is:

*	Rs.950	*	Rs.450	*	Rs.400	*	Rs.500
---	--------	---	--------	---	--------	---	--------

vi) The ratio of 1.5 feet to 30 inches is:

$$* \quad 3:5 \quad * \quad 1:10 \quad * \quad 1:2 \quad * \quad 2:5$$

vii) If simple interest on Rs.5000 is Rs.100, then accumulated amount is Rs.:

$$* \quad 5500 \quad * \quad 4900 \quad * \quad 5100 \quad * \quad 1500$$

viii) $A \times A^{-1} =:$

$$* \quad A^{-1} \quad * \quad A \quad * \quad \text{Null matrix} \quad * \quad I$$

ix) When a series of equal amount is made at equal intervals, each payment is known as:

* Annuity	*	Principal amount	*	Interest	*	Investment
-----------	---	------------------	---	----------	---	------------

x) The slope of x-axis is:

$$* \quad 2 \quad * \quad 3 \quad * \quad 5 \quad * \quad 0$$

-----XXXXXXXXXXXX-----