

Roll No _____ (To be filled in by the candidate)

(Academic Sessions 2019 – 2021 to 2022 – 2024)

BUSINESS MATHEMATICS

LHR-11-23

Q.PAPER (Objective Type)

223-1st Annual-(INTER PART – I)

Time Allowed : 15 Minutes

Maximum Marks : 10

PAPER CODE = 6644

Note : Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1	Solution set of $x^2 + x - 12 = 0$ is : (A) $\{3, -4\}$ (B) $\{-3, 4\}$ (C) $\{3, 4\}$ (D) $\{-3, -4\}$
2	The order of a matrix $\begin{bmatrix} 1 & 3 & 5 \end{bmatrix}$ is : (A) 1×1 (B) 2×2 (C) 3×1 (D) 1×3
3	The term "function" was introduced by : (A) Newton (B) Cauchy (C) Leibniz (D) Lagrange
4	In a binary system, digits used : (A) $(1, 2)$ (B) $(0, 2)$ (C) $(0, 1)$ (D) $(1, 10)$
5	160 is 20% of what number : (A) 800 (B) 8000 (C) 80 (D) 80000
6	Degree of linear equation is : (A) One (B) Two (C) Three (D) Four
7	Ratio between 10 minutes and 30 minutes is : (A) 2 : 3 (B) 1 : 3 (C) 2 : 4 (D) 1 : 5
8	The determinant of an identity matrix is equal to : (A) 0 (B) 1 (C) -1 (D) 2
9	The number '4' in a binary system is : (A) $(101)_2$ (B) $(100)_2$ (C) $(111)_2$ (D) $(1010)_2$
10	Simple interest on Rs.400 @ 9% annually in 2 years is : (A) 36 (B) 360 (C) 72 (D) 720

Roll No _____ CHR-11-23 (To be filled in by the candidate)

(Academic Sessions 2019– 2021 to 2022 – 2024)

BUSINESS MATHEMATICS

(Essay Type)

223-1st Annual-(INTER PART – I)

Time Allowed : 1.45 hours

Maximum Marks : 40

SECTION – I

2. Write short answers to any SIX (6) questions :

12

(i) Divide Rs.7500 in ratio 3 : 2.

(ii) Find the mean proportional between 4 and 9

(iii) A chair that costs Rs.190 is sold for Rs.250. Find the percentage of profit.

(iv) Find the simple interest on Rs.80000 invested for three years at 9% per annum.

(v) Define annuity due.

(vi) Solve $\frac{3x}{8} + 5 = 17$

(vii) Solve $3x + 2 = 2x + 6$

(viii) Solve by factorization $x^2 + 9x + 18 = 0$

(ix) Solve by completing square method $x^2 - 9x + 4 = 0$

3. Write short answers to any SIX (6) questions :

12

(i) If $f(x) = x^2 - 5x + 6$, find $f(1), f(0)$

(ii) Find the slope and y-intercept of the equation $y = \frac{3}{2}x + 2$

(iii) Convert $(23)_{10}$ into binary number system.

(iv) Convert $(10011)_2$ into decimal system.

(v) Evaluate $(1101)_2 - (11)_2$

3. (vi) Define transpose of a matrix.

(vii) Find AB if $A = \begin{bmatrix} 2 & 1 \\ 3 & 1 \end{bmatrix}, B = \begin{bmatrix} 2 \\ 1 \end{bmatrix}$

(viii) If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}, B = \begin{bmatrix} 4 & 3 \\ 5 & 2 \end{bmatrix}$, then find $2A + 3B$

(ix) Find the value of x when $A = \begin{bmatrix} 2x & -4 \\ -1 & 5 \end{bmatrix}$ and $|A| = 16$

SECTION – II

Note : Attempt any TWO questions.

4. (a) 16 men complete a job in 10 days. How long would it take 32 men to complete the same job? 4

(b) Find the compound amount at the end of one year if Rs.2000 are invested at 10% interest compounded annually. 4

5. (a) A firm sells a single product as Rs.65 per unit and variable cost is Rs.47.50 and fixed cost is Rs.10000. Find the profit function in terms of 'x' No. of units produced and sold. 4

(b) Find the value of x $\frac{x+2}{x-3} + \frac{x-3}{x+2} = \frac{5}{2}$ 4

6. (a) Solve by Cramer's rule $x + y = 10$
 $x - y = 2$ 4

(b) Simplify : $\{(100111)_2 + (10101)_2\} - (10111)_2$ 4