

INTERMEDIATE PART-I (11th CLASS)**BUSINESS MATHEMATICS & STATISTICS (NEW SCHEME)****PAPER-I (COMMERCE GROUP)**

TIME ALLOWED: 2.10 Hours

MAXIMUM MARKS: 60

SUBJECTIVE

NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I

2. Attempt any six parts.

6 × 2 = 12

- (i) Simplify the ratio 4 : 12 : 16
- (ii) Distribute a stock of 6000 electric fans to three dealers in ratio 3 : 5 : 4
- (iii) Find the fourth proportional to 24, 18, 8.
- (iv) Find 25 % of 12000.
- (v) A trader bought an electric fan for Rs.500 and made a profit 12½ %. Find the sale price.
- (vi) Find simple interest to Rs.60000 borrowed for 3 years at 8 % per annum.
- (vii) Write formula for simple interest.
- (viii) Define ordinary annuity.
- (ix) Write definition of mark down.

3. Attempt any six parts.

6 × 2 = 12

- (i) If $f(x) = 10x + 5$ find $f(1)$, $f(-1)$
- (ii) If $f(x) = 3x - 5$ find $f(2)$ and $f(3)$
- (iii) Draw graph of Linear Function $3x = -y + 2$
- (iv) If $y = 40 - 4x$ find y when $x = 3.5$
- (v) Solve $3x + 9 = 12$
- (vi) Solve $4x - 7 = 2x - (-1)$
- (vii) Solve $x^2 - 5x + 6 = 0$
- (viii) Solve $8x^2 = 72$
- (ix) Solve $x + y = 8$, $x - y = 4$

4. Attempt any six parts.

6 × 2 = 12

- (i) Define diagonal matrix and give example.
- (ii) If $A = \begin{bmatrix} 1 & 2 \\ -1 & 3 \end{bmatrix}$ find $Adj A$
- (iii) Find value of λ if $A = \begin{bmatrix} \lambda & 4 \\ 3 & 2 \end{bmatrix}$ is singular.
- (iv) Convert into decimal system $(1111)_2$
- (v) If $A = \begin{bmatrix} 2 & 3 \\ 1 & 6 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 7 \\ 6 & 3 \end{bmatrix}$ find AB .
- (vi) Define Decimal Number System.
- (vii) Simplify $(1001)_2 + (11)_2$
- (viii) Convert into binary system 35.
- (ix) Simplify $(101)_2 \times (11)_2$

SECTION-II**NOTE: - Attempt any three questions.**

- 5.(a) 10 workers complete a task in 15 days. How long would it take 12 workers to complete the same task? 4
- (b) Find the simple interest on Rs.100000 borrowed for 4 years at 12 % annually. 4
- 6.(a) Calculate compound interest earned for Rs.5000 invested for 6 years at the rate of 7 % per annum. 4
- (b) Differentiate between Even and Odd Function. 4
- 7.(a) Solve $\frac{3x}{2} - \frac{x}{2} = \frac{5(x-4)}{6}$ 4
- (b) Solve the quadratic equation $6x^2 + 7x + 2 = 0$ by factorization. 4
- 8.(a) Find the matrix A if $2A + 3B = C$ where $B = \begin{bmatrix} 1 & 2 \\ 0 & 4 \\ 4 & 0 \end{bmatrix}$ and $C = \begin{bmatrix} 3 & -1 \\ 2 & 0 \\ -1 & -1 \end{bmatrix}$ 4
- (b) Find the values of x if $\begin{vmatrix} 1 & 2 & 1 \\ 2 & x & 2 \\ 3 & 6 & x \end{vmatrix} = 0$ 4
- 9.(a) Simplify $\{(10111011)_2 - (101110)_2\} + (10000000)_2$ 4
- (b) Convert 912 in binary system. 4