

Roll No. _____

Business Mathematics
(Commerce Group)(INTER PART – I Class 11th) 322**PAPER: I****Time: 15 Minutes****OBJECTIVE****Marks: 10****Code: 6641**

6641-22

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank.

- 1- 1- In the proportion $a : b :: c : d$ the means are _____.
(A) a, b (B) b, c (C) c, d (D) a, d
- 2- 20 % of 12000 is = _____.
(A) 2400 (B) 3600 (C) 240 (D) 360
- 3- Formula for simple interest is $I =$ _____.
(A) $\frac{P}{R \times T}$ (B) $\frac{T}{R \times P}$ (C) $\frac{R}{P \times T}$ (D) $P \times R \times T$
- 4- If $f(x) = 4x^2 - 5x + 1$ then the value of $f(-2)$ is = _____.
(A) 3 (B) 6 (C) 27 (D) 25
- 5- If $ax + b = c$ then the value of x is = _____.
(A) $\frac{b+c}{a}$ (B) $\frac{c-b}{a}$ (C) $\frac{b-c}{a}$ (D) $\frac{a+b}{c}$
- 6- Discriminant of $2x^2 - 3x + 2 = 0$ is _____.
(A) 7 (B) 8 (C) 9 (D) -7
- 7- Additive inverse of $\begin{bmatrix} -7 & 2 \\ 1 & 5 \end{bmatrix}$ is = _____.
(A) $\begin{bmatrix} -7 & -2 \\ 1 & 5 \end{bmatrix}$ (B) $\begin{bmatrix} 7 & -2 \\ -1 & -5 \end{bmatrix}$ (C) $\begin{bmatrix} 7 & 2 \\ 1 & 5 \end{bmatrix}$ (D) $\begin{bmatrix} 7 & -2 \\ 1 & -5 \end{bmatrix}$
- 8- Number of digits in decimal system is = _____.
(A) 10 (B) 8 (C) 9 (D) 2
- 9- Sum of $(111)_2$ and $(10)_2$ is = _____.
(A) $(1010)_2$ (B) $(1110)_2$ (C) $(1001)_2$ (D) $(1100)_2$
- 10- If order of a matrix B is 3×4 , then order of B^t is = _____.
(A) (3×3) (B) (3×4) (C) (4×4) (D) (4×3)

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Time: 1:45 hours

SUBJECTIVE

40722

Marks: 40

Note: Section I is compulsory. Attempt any two (2) questions from Section II.

SECTION I

2. Write short answers to any SIX questions:

(2 x 6 = 12)

- i- Reduce the ratio 48 : 120 to its lowest form.
- ii- Find the value of x if, $2 : 4 :: 8 : x$
- iii- What percentage is 285 of 800?
- iv- Define ordinary annuity and how it is different from annuity due.
- v- Rs.15000 deposited for 3 years at 10 % per annum. Calculate simple interest.
- vi- Solve the equation: $7x + 10 = 3x + 22$
- vii- Four times a number is 160. What is number?
- viii- Solve by factorization $x^2 - 10x + 24 = 0$
- ix- Define quadratic equation and write the quadratic formula.

3. Write short answers to any SIX questions:

(2 x 6 = 12)

- i- Explain the domain and range of a function.
- ii- Find $g(2x)$ & $g(-y)$ for the function $g(x) = x^2 - x$
- iii- Change 5 into binary number.
- iv- Simplify $(1001)_2 \times (101)_2$
- v- Convert $(1110)_2$ into decimal number system.
- vi- Define square matrix and give its example.
- vii- If $A = \begin{bmatrix} 3 & -1 \\ 2 & 1 \end{bmatrix}$, $E = \begin{bmatrix} -2 & 3 \\ 4 & 5 \end{bmatrix}$ then find $(A + B)^t$
- viii- If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, find A^2
- ix- If $A = \begin{bmatrix} 4 & 1 \\ 5 & 8 \end{bmatrix}$, then find $|A|$ and $\text{adj } A$

SECTION II

- 4- (a) The price of a radio set is raised from RS.600 to Rs.624. Find the price percentage increase. 4
- (b) Calculate compound interest when Rs.750 invested for 8 years at 12 % per annum. 4
- 5- (a) Solve the following equation $\frac{2x-4}{5x+2} = \frac{4x-8}{10x+3}$ 4
- (b) Draw the graph of the function: $y = x + 3$ 4
- 6- (a) If $A = \begin{bmatrix} -2 & 6 \\ 4 & 7 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix}$ Prove the $(AB)^t = B^t A^t$ 4
- (b) Evaluate $(11110)_2 \times (1011)_2$ 4