

Syllabus:

(Ch# 1,3,SQ of 7.1,10, 12(Theourum #1,2,3) Define ch. 1,3,7,10)

Math (Science)	9th Punjab Board	Paper - 1
Time : 20 Minutes	OBJECTIVE	Max. Marks :15

- 1.1 The idea of matrices was given by _____.
 (A) Henry Briggs (B) Jobst Burgi (C) Arthur Cayley (D) John Napier
2. The logarithm of unity of any base is.
 (A) 1 (B) 10 (C) e (D) 0
3. Antilogarithm table was prepared by _____.
 (A) Henry Briggs (B) Jobst Burgi (C) Arthur Cayley (D) John Napier
4. $\log_p - \log_q$ is same as

- (A) $\log\left(\frac{p}{q}\right)$ (B) $\log(p - q)$ (C) $\frac{\log p}{\log q}$ (D) $\log\left(\frac{q}{p}\right)$

5. If $a^x = n$ then :
 (A) $a = \log_x n$ (B) $x = \log_n a$ (C) $x = \log_a n$ (D) $a = \log_n x$

6. The order of matrix $\begin{bmatrix} 2 & 1 \end{bmatrix}$ is:

- (A) 2-by-1 (B) 1-by-2 (C) 1-by-1 (D) 2-by-2
7. Which is order of a square matrix?
 (A) 1-by-2 (B) 1-by-1 (C) 2-by-2 (D) 1-by-2

8. $\log_a a \times \log_c b$ can be written as

- (A) $\log_a c$ (B) $\log_c a$ (C) $\log_a b$ (D) $\log_a c$

9. $\log_e =$ _____ where $e \cong 2.718$:

- (A) 0 (B) 0.4343 (C) ∞ (D) 1

10. Value of $\log p/q$ is

- (A) $\log p - \log q$ (B) $\frac{\log p}{\log q}$ (C) $\log p + \log q$ (D) $\log q - \log p$

11. The relation of $y = \log_z x$ implies.

- (A) $z^y = x$ (B) $x^y = z$ (C) $x^z = y$ (D) $y^z = x$

12. Matrix 2002 is called _____ matrix.

- (A) Zero (B) Identity (C) Scalar (D) Singular

13. Order of transpose of $\begin{bmatrix} 210 & 132 \end{bmatrix}$ is:

- (A) 3-by-2 (B) 2-by-3 (C) 3-by-1 (D) 1-by-3

14. Product of $\begin{bmatrix} x & y \end{bmatrix} \begin{bmatrix} 2 \\ -1 \end{bmatrix}$ is equal to

- (A) $[2x + y]$ (B) $[x - 2y]$ (C) $[2x - y]$ (D) $[x + 2y]$

15. If $\begin{bmatrix} 2 & 6 \\ 3 & x \end{bmatrix} = 0$ then x is equal to.

- (A) 0 (B) -6 (C) 6 (D) -9

	A B C D		A B C D		A B C D		A B C D		A B C D
1	A B C D	4	A B C D	7	A B C D	10	A B C D	13	A B C D
2	A B C D	5	A B C D	8	A B C D	11	A B C D	14	A B C D
3	A B C D	6	A B C D	9	A B C D	12	A B C D	15	A B C D

نوٹ: معروضی سوال نامے کو جسے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو تین کی سی ای یا مار کر سے اس طرح پڑھ کرین کہ سی ای دائرے سے باہر نہ لگے۔ ایک سے زیادہ دائروں کو پڑھنے یا کاٹ کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

Syllabus:

(Ch# 1,3,SQ of 7.1,10, 12 (Theorem #1,2,3) Define ch. 1,3,7,10)

Math (Science)	9th Punjab Board	Paper - 1
Time : 2:10 Hours	(ESSAY TYPE)	Max. Marks :60

(PART - I)

2 Answer briefly any SIX parts from following.

12

(i) Define Skew-Symmetric Matrix and Identity Matrix.

(ii) Define Matrix and Equal Matrices.

(iii) Solve $x + \frac{1}{3} = 2\left(x - \frac{2}{3}\right) - 6x$

(iv) If $A = \begin{bmatrix} 1 & 2 \\ 4 & 6 \end{bmatrix}$ then find determinant and adjoint of A.

(v) Prove that $\log_a(mn) = \log_a m + \log_a n$

(vi) Calculate $\log_3 2 \times \log_2 81$

(vii) Find the value of 'x', if $\log_{64} 8 = \frac{x}{2}$

(viii) Evaluate $\log 512$ to the base $2\sqrt{2}$

(ix) Evaluate with the help of logarithm: 0.29×0.004236

3. Answer briefly any SIX parts from following.

12

(i) If $A = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}$, then verify that $A + A^t$ is symmetric.

(ii) Define Characteristics.

(iii) Find product $\begin{bmatrix} 1 & 2 \\ 3 & 4 \\ -1 & 1 \end{bmatrix} \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$

(iv) Find the multiplicative inverse $A = \begin{bmatrix} -1 & 3 \\ 2 & 0 \end{bmatrix}$

(v) If $A = \begin{bmatrix} 1 & -2 \\ 3 & 4 \end{bmatrix}$ and $B = \begin{bmatrix} 0 & 7 \\ -3 & 8 \end{bmatrix}$ then find $2A^t - 3B^t$

(vi) Define Congruency of triangles.

(vii) Express $\log x - 2\log x + 3\log(x+1) - \log(x^2-1)$

(viii) If $\log 2 = 0.3010$, $\log 3 = 0.4771$, $\log 5 = 0.6990$ the find value of.

(ix) If $v = \frac{1}{3}\pi r^2 h$, find v, when $\pi = \frac{22}{7}$, $r = 2.5$ and $h = 4.2$

4. Answer briefly any SIX parts from following.

12

(i) Solve and check. $\sqrt{\frac{x+1}{x+5}} = 2$

(ii) What is logarithm of a Real Number?

(iii) Solve and check $\sqrt[3]{2x+3} = \sqrt[3]{x-2}$

(iv) Find a, b, c and d, if $\begin{bmatrix} a+c & a+2b \\ c-1 & 4d-6 \end{bmatrix} = \begin{bmatrix} 0 & -7 \\ 3 & 2d \end{bmatrix}$

(vi) Given $A = A_0 e^{-kt}$, if $k = 2$, what should be the value of 'd' to make $A = \frac{A_0}{2}$?

(vii) Use Logarithm tables to find the value of 0.8176×13.64

(viii) Use Cramer's rule to solve: $2x - 2y = 4$; $3x + 2y = 6$

(ix) Write in scientific notation 23.07×10^{-3} and 0.000478×10^7

(PART - II)

Note : Attempt THREE questions in all. But question No.9 is compulsory.

5. (a) One acute angle of a triangle is 12° more than twice the other acute angle. Find the acute angles of the right triangle. 4

(b) Prove: $\log_a n = \log_b n \times \log_a b$ 4

6. (a) Show that $7 \log \frac{16}{15} + 5 \log \frac{25}{24} + 3 \log \frac{81}{80} = \log 2$ 4

(b) If $A = \begin{bmatrix} 0 & 1 \\ 2 & -3 \end{bmatrix}$, $B = \begin{bmatrix} -3 & 4 \\ 5 & -2 \end{bmatrix}$ and $C = 0.6 - 2.5$ then prove that 4

$$A(BC) = (AB)C$$

7. (a) If $A = \begin{bmatrix} 3 & 2 \\ 1 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 2 & 4 \\ -3 & -5 \end{bmatrix}$ then verify $(AB)^{-1} = B^{-1}A^{-1}$ 4

(b) Use matrices to solve: $2x - 2y = 4$; $-5x - 2y = -10$ 4

8. (a) Use log tables to solve $\frac{(438)^3 \sqrt{0.056}}{388}$ 4

(b) The length of a triangle is 4 times its width. The perimeter of the rectangle is 150cm. Find dimensions of the rectangle. 4

9. Prove that any point equidistant from the end points of a line segment is on the right bisector of it. 8

OR

Prove that the right bisectors of the sides of a triangle are concurrent.