

TEST – 5

Syllabus:

(Ch# 1 – 4, SQ of 10 – 13,12 (All Theorem) .1st HALF BOOK

MATHEMATICS (SCIENCE)

-2020- (9TH CLASS)

PAPER: II (OBJECTIVE TYPE)

TIME ALLOWED: 15 Min

Marks: 15

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 circle will result in zero mark in that question.

1.1 Matrix $\begin{bmatrix} \sqrt{2} & 0 \\ 0 & \sqrt{2} \end{bmatrix}$ is called _____ matrix.

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

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

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

3. $\left(\frac{25}{16}\right)^{-1/2} =$ _____

- (A) $\frac{5}{4}$ (B) $+\frac{4}{5}$ (C) $-\frac{5}{4}$ (D) $-\frac{4}{5}$

4. Imaginary part of $-i(3i + 2)$ is.

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

5. If $\sqrt[3]{35}$ the radicand is _____

- (A) 3 (B) $1/3$ (C) 35 (D) None

6. The logarithm of unity to any base is.

- (A) 1 (B) 10 (C) e (D) 0

7. Real part of complex number $2ab(i - i^2)$ is:

- (A) $2ab$ (B) $2abi$ (C) $-2ab$ (D) $2abr$

8. $4x + 3y - 2$ is an algebraic _____

- (A) Sentence (B) Expression (C) Equation (D) In Equation

9. $\frac{1}{a-b} - \frac{1}{a+b}$ is equal to.

- (A) $\frac{2a}{a^2 - b^2}$ (B) $\frac{2b}{a^2 - b^2}$ (C) $\frac{-2b}{a^2 - b^2}$ (D) $\frac{-2a}{a^2 - b^2}$

10. $\frac{a^2 - b^2}{a + b}$ is equal to.

- (A) $(a - b)$ (B) $(a + b)$ (C) $(a + b)^2$ (D) $(a - b)^2$

11. $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})$ is equal to.

- (A) $a^2 - b^2$ (B) $a^2 + b^2$ (C) $a + b$ (D) $a - b$

12. $\log_b a \times \log_c b$ can be written as

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

13. $\log_e e =$ _____ where $c \cong 2.718$:

- (A) 0 (B) 0.4343 (C) ∞ (D) 1

14. $\log p - \log q$ is same as

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

15. The relation of $y = \log z$ x implies.

- (A) $Z^y = x$ (B) $x^y = z$ (C) $x^2 = y$ (D) $y^2 = x$

	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
2	(A)	(B)	(C)	(D)	5	(A)	(B)	(C)	(D)	8	(A)	(B)	(C)	(D)	11	(A)	(B)	(C)	(D)	14
3	(A)	(B)	(C)	(D)	6	(A)	(B)	(C)	(D)	9	(A)	(B)	(C)	(D)	12	(A)	(B)	(C)	(D)	15

نوٹ: معروضی سوال نامے کو توچر سے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو بچین کی سیاہی یا مارکر سے اس طرح پُر کریں کہ سیاہی دائرے سے باہر نہ نکلے۔ ایک سے زیادہ دائروں کو پُر کرنے یا کاٹ گرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔



TEST-5

Syllabus:

(Ch# 1 – 4 , SQ of 10 – 13, 12 (All Theorem) .1ST HALF BOOK.

MATHEMATICS (SCIENCE)

2020-(9TH CLASS)

Paper: (Essay Type)

Time Allowed: 2:10 hours

Maximum Marks: 60

(PART – I)

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

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- (i) If $\log 31.09 = 1.4926$, then find $\log 3.109$, $\log 310.9$, $\log 0.003109$, $\log 0.3109$ without using tables.
- (ii) Prove that $\log_a \frac{m}{n} = \log_a m - \log_a n$.
- (iii) Simplify $\frac{x^2 - 25}{x^2 - 36} \cdot \frac{x + 5}{x - 6}$
- (iv) Simplify $\frac{x^6 - y^6}{x^2 - y^2} - (x^4 + x^2 y^2 + y^4)$.
- (v) Simplify $\frac{(x+y)^2 - 4xy}{(x-y)^2}$
- (vi) If $(a+b)=10$, and $(a-b)=6$, then find (a^2+b^2)
- (vii) If $(3x + \frac{1}{3x}) = 5$ then find $27x^3 + \frac{1}{27x^3}$
- (viii) Sum of opposite angles of the parallelogram is 110° , find the remaining angles.
- (ix) What will be the angle for shortest distance from an outside point to the line.

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

12

- (i) If $z = 2 + 3i$, then show that $\frac{1}{2i}(z - \bar{z})$ is the imaginary part of z .
- (ii) If $A = \begin{bmatrix} 4 & 0 \\ -1 & 2 \end{bmatrix}$, then show that $A(\text{Adj.}A) = (\text{Adj.}A)A$
- (iii) If $A = \begin{bmatrix} 4 & 0 \\ -1 & 2 \end{bmatrix}$, then find A^t and $|A|$.
- (iv) Simplify $\sqrt[5]{\frac{3}{32}}$.
- (v) Simplify $\left(\frac{4a^3 b^0}{9a^{-5}}\right)^{-2}$.
- (vi) Use log tables to find the value of $(789.5)^{\frac{1}{8}}$.
- (vii) If $p v^n = C$. Find C when $p = 80$, $v = 3.1$, $n = 5/4$.
- (viii) Define Mantissa.
- (ix) If $A = \begin{bmatrix} 3 & 2 \\ 6 & 2 \end{bmatrix}$, then find A^{-1} .

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

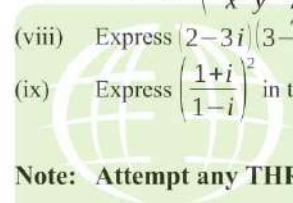
12

- (i). What is Skew-symmetric matrix?
- (ii) What are Singular & Non-singular matrices?
- (iii) What is additive identity?
- (iv) Represent $\sqrt{2}$ on number line.
- (v) Define characteristic.
- (vi) Evaluate $\log_2 \frac{1}{128}$
- (vii) Simplify $\left(\frac{x^{-2} y^{-1} z^{-4}}{x^4 y^{-3} z^0}\right)^{-3}$
- (viii) Express $(2-3i)(3-2i)$ in the standard form $a+bi$.
- (ix) Express $\left(\frac{1+i}{1-i}\right)^2$ in the standard form $a+bi$.

(PART – II)

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

5. (a) Evaluate with the help of log tables. $\sqrt[3]{\frac{0.07921 \times (18.99)^2}{(5.79)^4 \times 0.9474}}$ 4
- (b) Use matrix inversion method to solve: $4x + y = 9; -3x - y = -5$. 4



6. (a) Two cars that are 600 km apart are moving towards each other. Their speed differ by 6 km/h and cars are 123km apart after $4\frac{1}{2}$ hours. Find speed of each car. 4
- (b) Use Cramer's rule to solve. $2x - 2y = 4$; $-5x - 2y = -10$. 4
7. (a) Determine rational numbers 'a' and 'b' if $\frac{\sqrt{3}-1}{\sqrt{3}+1} + \frac{\sqrt{3}+1}{\sqrt{3}-1} = a + b\sqrt{3}$ 4
- (b) Simplify $\left(\frac{a^p}{a^q}\right)^{p+q} \cdot \left(\frac{a^q}{a^r}\right)^{q+r} \div 5(a^p \cdot a^r)^{p-r}$. 4
8. (a) Solve for real 'x' and 'y' $(3-2i)(x+yi) = 2(x-2yi) + 2i - 1$. 4
- (b) Find product by using formula.
 $(x-y)(x+y)(x^2+y^2)(x^2+xy+y^2)(x^2-xy+y^2)(x^4-x^2y^2+y^4)$ 4
9. **Prove that the bisectors of the angles of a triangle are concurrent.** 8
- OR**
- Prove that any two angles in the same segment of a circle are equal.**