

MRD-9th (2025)**Time: 3 Hours****MATHEMATICS-9th****Marks: 65****Note:** There are three sections in this paper i.e, A,B & C?**Version: C****INSTRUCTION:**

- Please attempt Section-A on the MCQs Answer Sheet only.
- Only black ball point or marker may be used for shading the relevant circle.
- Please make sure that there is no cutting, over writing, erasing, or multiple circles shading.

Time: 20 Minutes**SECTION-A****Marks: 15****Q1: Choose the correct option i.e, A,B,C or D?**

1. The conjugate of the complex number $5+11i$ is.
☐ $-5+11i$ ☐ $-5-11i$ ☐ $11+5i$ ☐ $5-11i$
2. In scientific notation, 0.0072 is written as;
☐ 7.2×10^3 ☐ 72×10^4 ☐ 7.2×10^{-3} ☐ 72×10^4
3. $(x+y)^2 + (x-y)^2$
☐ $2(x^2 + y^2)$ ☐ $2(x^2 - y^2)$ ☐ $4xy$ ☐ $x^4 - y^4$
4. What is the remainder when $x^4 - 3x^2 + 2x - 1$ is divided by $x-1$?
☐ 5 ☐ 1 ☐ -1 ☐ -5
5. The HCF of $x^2 - 9$ and $(x-3)^2$ is.
☐ $x-3$ ☐ $(x-3)^2$ ☐ $(x+3)(x-3)$ ☐ $(x+3)(x-3)^2$
6. The absolute value of 12 is.
☐ -144 ☐ -12 ☐ 12 ☐ 144
7. The point (3, -7) lies in.
☐ 1st quadrant ☐ 2nd quadrant ☐ 3rd quadrant ☐ 4th quadrant
8. The pair of matrices which is conformable for multiplication is.
☐ $\begin{bmatrix} 10 & 6 \\ 7 & 4 \end{bmatrix}$ ☐ $\begin{bmatrix} 6 & 8 \end{bmatrix}$ and $\begin{bmatrix} 5 \\ 4 \end{bmatrix}$
☐ $\begin{bmatrix} 2 \end{bmatrix}$ and $\begin{bmatrix} 2 \\ 4 \end{bmatrix}$ ☐ $\begin{bmatrix} 2 & 4 & 6 \end{bmatrix}$ and $\begin{bmatrix} 2 \\ 6 \end{bmatrix}$
9. If $A = \begin{bmatrix} 6 & 5 \\ 2 & 3 \end{bmatrix}$, then $|A| =$
☐ 28 ☐ 8 ☐ -8 ☐ -28
10. The adjoint of the matrix $\begin{bmatrix} 6 & 8 \\ -5 & 9 \end{bmatrix}$ is.

$$\bigcirc \begin{bmatrix} 9 & -5 \\ 8 & 6 \end{bmatrix} \bigcirc \begin{bmatrix} -6 & -5 \\ 8 & -9 \end{bmatrix} \bigcirc \begin{bmatrix} 9 & -8 \\ 5 & 6 \end{bmatrix} \bigcirc \begin{bmatrix} -6 & -8 \\ 5 & -9 \end{bmatrix}$$

11. Which of the given is the decimal representation of $\frac{5}{6}$?

$\bigcirc 0.83$ $\bigcirc 0.8\bar{3}$ $\bigcirc 1.2$ $\bigcirc 1.\bar{2}$

12. The additive inverse of -9 is.

$\bigcirc -\frac{1}{9}$ $\bigcirc 0$ $\bigcirc 1$ $\bigcirc 9$

13. The exponential form of $\sqrt[4]{x^{16}}$ is.

$\bigcirc x^8$ $\bigcirc x^{12}$ $\bigcirc x^{20}$ $\bigcirc x^{64}$

14. The index of the radical in the expression $\sqrt[11]{8z^3}$ is.

$\bigcirc \sqrt{}$ $\bigcirc 3$ $\bigcirc 8$ $\bigcirc 11$

15. The imaginary part of the complex number $-11-5i$ is.

$\bigcirc 11$ $\bigcirc 5$ $\bigcirc -5$ $\bigcirc -11$

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Time: 3 Hours

MATHEMATICS-9th

Marks: 75

SECTION-B

Marks: 36

Q2: Attempt any NINE parts?

1. Find D-1 using adjoint method when $D = \begin{bmatrix} 7 & 1 \\ 9 & 2 \end{bmatrix}$?

2. Simplify the given expression $\left(\frac{x^1}{x^m}\right)^{1+m} \cdot \left(\frac{x^m}{x^n}\right)^{m+n} \cdot \left(\frac{x^n}{x^1}\right)^{n+1}$

3. Simplify with the help of logarithm $\frac{9.54 \times 7.32}{3.58}$?

4. If $x + \frac{1}{x} = -4$, then find the value of $x^3 + \frac{1}{x^3}$?

5. If $r = \sqrt{5} - 2$, then find the value of $r - \frac{1}{r}$?

6. Factorize $p^2 + p - 12$?

7. Find the square root of $x^2 + 14xy + 49y^2$ by factorization method?

8. Solve and verify: $\sqrt{5x+2} = \sqrt{3x+14}$

9. Solve and plot on number line $2(y-6) > 16$

10. Use distance formula to show that the points $A(0, -3)$, $B(\sqrt{27}, 0)$ and $C(0, 3)$ are the vertices of an equilateral triangle.

11. Prove that if two angles of a triangle are congruent, then the sides opposite to them are also congruent?

12. Prove that the opposite sides of parallelogram are congruent?

SECTION-C

Marks: 24

Q3: Attempt any THREE questions?

1. Prove that the right bisectors of the sides of a triangle are concurrent?
2. Prove that the sum of the lengths of any two sides of a triangle is greater than the length of the third side?
3. Prove that the measures of the corresponding sides of two similar triangle are proportional?
4. Length of a side of an equilateral triangle is 6cm. Find the length of the altitude?
5. Prove that the triangles on the same base and of the same latitude are equal in area?
6. Construct a $\triangle PQR$ in which $mPQ = 4.5\text{cm}$, $m\angle P = 60^\circ$ and $m\angle Q = 30^\circ$?

