MRD-IX-19 (A) — P-352

Total Time: 3:00 Hours

Mathematics (9th)

(Fresh/New Course)

Total Marks: 75

Note: There are three sections in this paper i.e. Section A, B & C.

VERSION : B

Time Allowed: 20 Minutes

"Section-A"

Marks: 15

INSTRUCTIONS:

- Attempt this section on the MCQs Answer Sheet only.
- Use black ball point or marker for shading only one circle for correct option of a question.
- No mark will be awarded for cutting, erasing, over writing and multiple circles shading.

Q. 1. Choose the correct option i.e. A,B,C, or D.

1. $\sqrt[3]{125}$ = ……

Ⓐ 2 Ⓑ 3 ● 5 Ⓓ 25

2. $(i)\cdot(-i)$ = ……

Ⓐ -1 ● 1 Ⓒ $-i$ Ⓓ $-i^2$

3. In scientific notation 0.069 can be written as ……

Ⓐ 69×10^2 Ⓑ 6.9×10^3 ● 6.9×10^{-2} Ⓓ 0.69×10^3

4. The value of $(3x)^2 - x^2$ at $x = -3$ will be ……

Ⓐ -18 Ⓑ -72 Ⓒ 18 ● 72

5. $(x^3 y^2)(x^2 y^3)$ = ……

Ⓐ $x^4 y^4$ Ⓑ $x^4 y^5$ Ⓒ $x^5 y^4$ ● $x^5 y^5$

6. $x^2 - 16$ = ……

Ⓐ $(x-4)(x-4)$ Ⓑ $(x+4)(x+4)$ ● $(x+4)(x-4)$ Ⓓ $(x-4)(x^2+4)$

7. L.C.M of $x+y$, $x^2 - y^2$ is ……

Ⓐ $x+y$ Ⓑ $x-y$ ● $(x+y)(x-y)$ Ⓓ $(x-y)(x-y)$

8. The solution of $|x-4| = 3$ is ……

Ⓐ $\{1,-7\}$ Ⓑ $\{-1,7\}$ Ⓒ $\{-1,-7\}$ ● $\{7,1\}$

9. The point $(5,-2)$ is located in quadrant ……

Ⓐ I Ⓑ II Ⓒ III ● IV

10. If A(3, 0) and B(0, 3) are any two points in a plane, then |AB| = ……

Ⓐ 18 ● $\sqrt{18}$ Ⓒ $9\sqrt{2}$ Ⓓ Zero

11. If sum of the measures of $\angle A$ and $\angle C$ of a parallelogram ABCD is 120°, then $m\angle B$ = ……

Ⓐ 25° Ⓑ 50° Ⓒ 60° ● None of these

12. Perpendicular bisectors of a triangle are ……

Ⓐ Congruent ● Concurrent Ⓒ Parallel to each other Ⓓ Perpendicular to each other

13. If two triangles have equal bases and equal altitudes, what else they have equal?

● Area Ⓑ Perimeter Ⓒ Size Ⓓ Angles

14. A line segment joining the midpoint of one side of a triangle to its opposite vertex is called ……

Ⓐ Perpendicular bisector ● Median Ⓒ Altitude Ⓓ Angle bisector

15. [1 3 4] is a …… martix.

Ⓐ Identity Ⓑ Scalar Ⓒ Column Row

Total Time: 2:40 Hours

Mathematics (9th)

(Fresh/New Course)

Total Marks: 60

"Section-B"

Marks: 36

Q. 2. **Attempt any Nine (9) of the following parts. Each part carries equal marks.**

(i) Find the inverse of $= \begin{bmatrix} 0 & -3 \\ 2 & 4 \end{bmatrix}$

(ii) Find the HCF of $x-3$, x^2-9, $(x-3)^2$ by factorization method.

(iii) Simplify : $\left(\frac{25}{81}\right)^{\frac{1}{2}}$

(iv) Find anti-logarithm of 0.8401

(v) Find the value of $a^2 + b^2$, when $a+b=10, a-b=6$

(vi) If $x = 5-2\sqrt{6}$, find the values of $x+\frac{1}{x}$ and $x^2+\frac{1}{x^2}$

(vii) Factorize : $6x^3 - 15x^2 - 9x$

(viii) Factorize : $a^3 - 64b^3$

(ix) Find the square root of $4x^4 - 4x^3 + 18x^2 - 6x + 9$ by division method.

(x) Solve the equation $\sqrt{2x-7} + 8 = 11$

(xi) Find the solution set of $\left|\frac{3}{4}x - 8\right| = 1$

(xii) The length of a rectangular playground is twice its width. The perimeter is 60. Find its dimensions.

"Section-C"

Marks: 24

Note:- **Attempt any Three (3) questions. Each question carries equal marks.**

Q. 3. Prove that: A(2, 3), B(8, 11) and C(0, 17) are the vertices of an isosceles triangle.

Q. 4. Prove that: If two opposite sides of a quadrilateral are congruent, then the quadrilateral is a parallelogram.

Q. 5. Prove that: The right bisectors of the sides of a triangle are concurrent.

Q. 6. Construct Δ ABC, draw their angle bisectors and verify their concurrency.

$m\overline{AB} = 4.5$ cm, $m\overline{BC} = 3.1$ and $m\overline{CA} = 5.2$ cm