ROLL NUMBER .....

9161
MATHEMATICS (New Book) — 9th

Supdt. Sign & Seal .....

NOTE: There are three sections of this paper. Carefully read the instructions for each section and attempt accordingly. Attempt all questions of Section-A and return it to the Superintendent within given time, even if you have not attempted any question. Select the correct choice and write only A, B, C or D, whichever is appropriate, in the answer box. No marks will be awarded for cutting/erasing or overwriting.

SECTION-A

Time: 20 Minutes **Marks:** 15

1. If "A" is square matrix and $A^t = -A$, then which type of this matrix is? A) skew symmetric matrix, B) symmetric matrix, C) scalar matrix, D) none of these ..... A

2. $\sqrt[3]{64}$ = ... A) 64, B) 32, C) 16, D) 4 ..... D

3. Which one is the scientific notation of 0.25×10^{-2}? A) 2.5×10^{-1}, B) 2.5×10^{-2}, C) 2.5×10^{-3}, D) 2.5×10^{-4} C

4. Which is the characteristic of log0.000325? A) −2, B) −3, C) −4, D) 2 C

5. Which one is equal to $(a+b)^2+(a-b)^2$? A) $4a^2+4b^2$, B) $2a^2+2b^2$, C) 4ab, D) a^4+b^4 ..... B

6. Which one is the HCF of x^2-y^2 and x^2-xy? A) $x(x-y)$, B) $x-y$, C) x^2-y^2, D) $x(x^2-y^2)$ ..... B

7. Which one is the solution set of $\sqrt{x+4}=-6$? A) {4}, B) {−6}, C) {10}, D) none of these ..... D

8. Which one is solution set of $|x+4|=6$? A) {4,6}, B) {−4,6}, C) {4,−6}, D) {2,−10} ..... D

9. In which quadrant lies the point (2,3)? A) Quadrant-I, B) Quadrant-II, C) Quadrant-III, D) Quadrant-IV .. A

10. The line $y=a$ where a is a real number, is parallel to: A) x-axis, B) y-axis, C) z-axis, D) neither x-axis nor y-axis ..... A

11. Which one has greater length in right angled triangle? A) perpendicular, B) base, C) hypotenuse, D) median C

12. Which one is the sum of measures of interior angles of a quadrilateral? A) 180°, B) 360°, C) 270°, D) none of these ..... B

13. Which one is LCM of x^3-8 and x^2+x-6? A) x^3-8, B) x^2+x-6, C) $(x+3)(x-2)$, D) $(x+3)(x^3-8)$ ..... D

14. The medians $\overline{AD}$ and $\overline{BE}$ of $\triangle ABC$ intersect each other at G. If $m\overline{GD}=1.7$cm then what will be the value of $m\overline{AG}$? A) 2.7cm, B) 0.85cm, C) 3.4cm, D) 5.1cm C

15. Which diagonal does not divide into two congruent triangles? A) rectangle, B) square, C) parallelogram, D) trapezium ..... D

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Time: 2 Hours 40 Minutes

SECTION-B

Marks: 36

1. Attempt any nine of the following. All carry equal marks.

i. If $A=\begin{bmatrix}2 & 0\\ -3 & 1\end{bmatrix}$ and $B=\begin{bmatrix}1 & -1\\ -1 & 3\end{bmatrix}$ then find the value of A^{-1} and B^{-1}

ii. Find the product of: $2+3i$ and $4-5i$

iii. Simplify by logarithm: $(238.2)(9.506)$

iv. Find the value of a^3-b^3 when $a-b=2$ and $ab=15$

v. If $x=\sqrt{10}+3$ then find the value of $x-\frac{1}{x}$ and $x^2+\frac{1}{x^2}$

vi. Factorize $a^2+b^2+2ab-c^2-d^2-2cd$

vii. Find HCF by factorization $16m^2-14m+3$ and $6m^2+5m-4$

viii. Find LCM by factorization x^2-3x+2 and x^2-5x+6

ix. Simplify $\frac{x-y}{x+y}-\frac{x^2-2y^2}{x^2-y^2}$

x. For what value of x the expression $4x^4-12x^3+17x^2-13x+6$ will become a perfect square?

xi. Find the solution set of $|5x-13|+2=14$

xii. Solve the equation by graphical method $x+y=2$ and $x-y=4$

SECTION-C

Marks: 24

NOTE: Attempt any three of the following questions. All questions carry equal marks.

2. Find the centroid of the triangle ABC when A(1,2), B(3,1) and C(2,0)

3. Prove that in parallelogram the opposite sides and angles are congruent and the diagonals bisect each other.

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

5. Construct ΔPQR and draw their perpendicular bisectors, when $m\overline{PR}=5.8cm$, $m\overline{QR}=6.5cm$ and $m\overline{PQ}=7.0cm$.