Note: Time allowed for section B and C is 2 hours and 40 minutes.

SECTION "B"

Marks: 36

II. Attempt any NINE Parts out of the following. Each Part carries equal marks.

i. Prove that $(C-D)^t = c^t - D^t$ when $C=\begin{bmatrix} 7 & 3 \\ 5 & 2 \end{bmatrix}$ & $D=\begin{bmatrix} \frac{1}{2} & \frac{1}{2} \\ 2 & 2 \end{bmatrix}$

ii. Divide $Z_1=3i+4$ by $Z_2=1-i$.

iii. Solve the system of linear equations using inversion method $x-3y=0$, $2x+y=7$.

iv. Simplify $\frac{(ab)^{\frac{1}{b}}}{(\frac{1}{ab})^{\frac{1}{a}}}$

v. Simplify with the help of logarithm $\frac{2.83}{(6.52)^3}$

vi. Simplify with the help of formula $(x^a+y^b)(x^{2a}-xy^{ab}+y^{2b})$.

vii. If $x=\sqrt{10}+3$, Find the values of $x-\frac{1}{x}$ and $x^2+\frac{1}{x^2}$.

viii. Factorize $2x^3-128$.

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

x. Find HCF by division method y^3-3y+2 & y^3-5y^2+7y-3.

xi. Solve for x, $|-5x+1|=0$.

xii. What is the distance between two points with coordinates of (1,-5) and (-5,7)?

SECTION "C"

Marks: 24

Note: Attempt any THREE questions of the following. Each question carries equal Marks.

III. Prove that A(-1,3), B(-4,7), C(0,4) is an isosceles triangle.

IV. If two sides of a triangle are unequal in length, the longer side has an angle of greater measure opposite to it.

V. If two triangles are similar, then the measure of their corresponding sides are proportional.

VI. Construct $\triangle$ xyz. Whose m $\overline{xy}$=4.6cm, m $\overline{yz}$=5cm and m $\overline{zx}$=5.1cm. Draw angle bisectors of the triangle, and verify that these are concurrent.

MATHEMATICS (New) 9th	Paper Code	Roll No. of the Student						
Time: 20 Minutes Marks: 15	Ⓐ Ⓑ ●							
Multiple Choice Questions 01 Mark for each		Serial No. Of the Answer Book_____						

SECTION-A

Note:

1) Attempting all MCQs is compulsory. This paper along with the OMR sheet must be returned to the superintendent after due time.
2) Fill the circle ⒶⒷⒸⒹ, which one is correct with blue or black ball point, in this sheet as well as in separate OMR Sheet like ●
3) If more than one circle in the OMR sheet is filled then no credit will be given to such answer.

I.i. In △ABC, Medians $\overline{AD}$, $\overline{BE}$ and $\overline{CF}$ intersect at G. If CF=24. what is the length of $\overline{FG}$=?

Ⓐ 8 Ⓑ 12 Ⓒ 10 Ⓓ 16

ii. In △ ABC, $m\angle A=45°$, $m\angle B=55°$, $m\angle C=80°$. Which one of the following is the longest side.

Ⓐ $\overline{AC}$ Ⓑ $\overline{BC}$ Ⓒ $\overline{AB}$ Ⓓ None of these

iii. If two triangles have equal area then they will be _____ be congruent as well.

Ⓐ Not necessarily Ⓑ Necessarily Ⓒ Definitely Ⓓ None of these

iv. The centroid of a triangle divide the medians into the ratio of _____.

Ⓐ 5:1 Ⓑ 4:1 Ⓒ 3:1 Ⓓ 2:1

v. Parallelogram having same base and same altitude are _____.

Ⓐ Congruent Ⓑ Equal in Area Ⓒ Similar Ⓓ All of these

vi. Diagonals of a square are _____ to each other.

Ⓐ Perpendicular Ⓑ Not Congruent Ⓒ Congruent Ⓓ Parallel

vii. Three or more points lie on the same line are called_____.

Ⓐ Non-Collinear Ⓑ Collinear Ⓒ Non-Singular Ⓓ Singular

viii. The line x=a where a is a real number is parallel to _____.

Ⓐ y-axis Ⓑ x-axis Ⓒ Both x-axis & y-axis Ⓓ Neither x-axis nor y-axis

ix. Which one is the solution set of /-x/=0

Ⓐ {-1} Ⓑ {1} Ⓒ { } Ⓓ {0}

x. L.C.M of $(x-y)^4$ and $(x-y)^3$ is _____.

Ⓐ x-y Ⓑ $(x-y)^3$ Ⓒ $(x-y)^4$ Ⓓ $(x-y)^7$

xi. Factorization of $x^2+10x+21$ is _____.

Ⓐ (x+10) (x+21) Ⓑ (x-10) (x-21) Ⓒ (x-3) (x-7) Ⓓ (x+3) (x+7)

xii. If x=2, y=-3 then $(2x)^2-(3y)^2$=_____.

Ⓐ -65 Ⓑ -66 Ⓒ -67 Ⓓ -68

xiii. If $\log_2 8=x$ then x=_____.

Ⓐ 64 Ⓑ 3^2 Ⓒ 2^8 Ⓓ 3

xiv. a (b+c)=axb+axc, here the property used is _____.

Ⓐ Commutative Ⓑ Associative Ⓒ Distributive Ⓓ Closure

xv. Which of the following is the multiplicative inverse of $\begin{bmatrix}1&2\\0&1\end{bmatrix}$

Ⓐ $\begin{bmatrix}1&2\\0&1\end{bmatrix}$ Ⓑ $\begin{bmatrix}1&-2\\0&1\end{bmatrix}$ Ⓒ $\begin{bmatrix}-1&2\\0&1\end{bmatrix}$ Ⓓ $\begin{bmatrix}1&-2\\0&-1\end{bmatrix}$