Mathematics	9th, Gujranwala Board, 2015	Group – II
Time: 2.10 hours	Subjective	Marks = 60

Note: Section I is compulsory. Attempt any three questions from Section II and question no. 9 is compulsory.

Section-I

2. Write short answers to any Six questions: (2×6=12)

i. What is meant by adjoint of a matrix? Give example.

ii. Find the product

$$\begin{bmatrix} 2 & 3 \\ 1 & 1 \\ 0 & -2 \end{bmatrix} \begin{bmatrix} 2 & -1 \\ 3 & 0 \end{bmatrix}$$

iii. Simplify $\sqrt{108}$ into simplest form.

iv. Explain the concept of base and exponent with an example.

v. What is the difference between common logarithm and natural logarithm?

vi. Find the value of x if $\log x = 0.0044$.

vii. Define polynomial expression.

viii. Factorize $x^2 + x - 132$

ix. If $x = 2 - \sqrt{3}$, then

find the value of $\frac{1}{x}$

3. Write short answers to any Six questions: (2×6=12)

i. Define highest common factor (H.C.F).

ii. Solve for x, $|3x - 5| = 4$.

iii. Find solution set

$$\left|\frac{x+5}{2-x}\right| = 6$$

iv. Define cartesian plane.

v. Verify whether point (2, 3) lies on line $2x - y + 1 = 0$ or not.

vi. Find the distance between the points A (9, 2), B (7, 2).

vii. Define equilateral triangle.

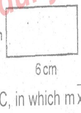
viii. If one angle of a right triangle is 30°, what is its hypotenuse?

ix. If one angle of || gram is 130°, what is the sum of other angles?

4. Write short answers to any Six questions: (2×6=12)

i. Define median of a triangle.

ii. Find area of the given figure.



iii. Construct a ΔABC, in which $m\overline{xy} = 6.1$ cm, $m\overline{yz} = 7.6$ cm and $m\angle x = 90°$.

iv. If $a^2 + b^2 - c^2$, then what kind of triangle it is?

v. Find unknown x in given figure.

vi. Define acute-angled triangle.

vii. Define ratio.

viii. What is meant by right bisector of a line segment?

ix. 3cm, 6 cm and 9 cm are not lengths of triangle. Why?

Section-II

(Each question = 8 marks, and each part = 4 marks)

5. (a) Solve the following equations by using matrix inverse method. $4x - 2y = 8$; $3x + y = -4$

(b) Prove that

$$\left(\frac{x^a}{x^b}\right)^{a+b} \times \left(\frac{x^b}{x^c}\right)^{b+c} \times \left(\frac{x^c}{x^a}\right)^{c+a} = 1$$

6. (a) Use log tables to find the value of

$$(789.5)^3$$

(b) If $3x + 4y = 11$ and $xy = 12$, then find the value of $27x^3 + 64y^3$

7. (a) Factorize $x^3 - 18x^2 + 108x - 216$

(b) Simplify to the lowest form

$$\frac{x^3 - 8}{x^2 - 4} \times \frac{x^2 + 6x + 8}{x^2 - 2x + 1}$$

8. (a) Find the solution set of $|8x - 3| = |4x + 5|$. Check it for extraneous roots also.

(b) Construct a triangle ABC. Draw the bisectors of its angles and verify their concurrency. $m\overline{AB} = 3.6$cm, $m\overline{BC} = 4.2$cm and $m\angle B = 75°$

9. The bisector of the angles of a triangle are concurrent.

OR

Parallelograms on the same base and between the same parallel lines (or of the same altitude) are equal in area.

www.ilmkidunya.com