

Math (Science)	9th...2018 Gujranwala Board	Paper I (Essay Type)
Time: 1:45 Hours	(Group-II)	Max Marks: 48

2. Write short answers to any SIX (6) questions. 12

- (i) If $C = [1 \ -1 \ 2]$, then find $C + [-2 \ 1 \ 3]$
- (ii) If $A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 6 \\ 5 \end{bmatrix}$, then find AB (if possible)
- (iii) Define complex number.
- (iv) If $x + iy + 1 = 4 - 3i$, then find the value of x and y .
- (v) Define antilogarithm.
- (vi) Find the common logarithm of 0.00032.
- (vii) Define algebraic expressions.
- (viii) If $a + b = 5$ and $a - b = \sqrt{17}$, then find ab .
- (ix) Use the remainder theorem to find the remainder when $x^3 - 3x^2 + 4x - 14$ is divided by $x + 2$.

3. Write short answers to any SIX (6) questions. 12

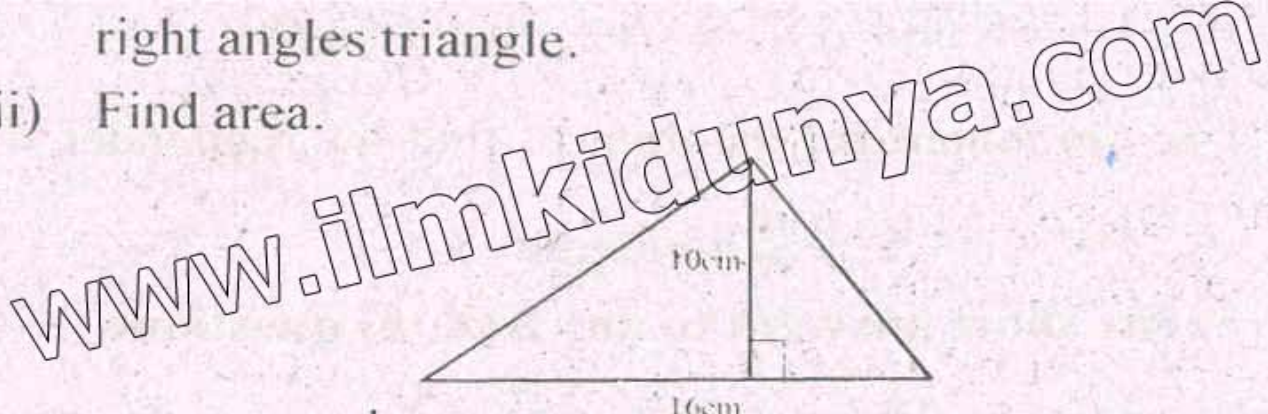
- (i) Find L.C.M $39x^7y^3z, 91x^5y^6z^7$
- (ii) Solve $\sqrt[3]{2x+3} = \sqrt[3]{x-2}$ equation and check for extraneous solution.
- (iii) Find solution set of $\left| \frac{x+5}{2-x} \right| = 6$
- (iv) Define origin.
- (v) Find values of m and c after expressing line in the form $y = mx + c, 2x + 3y - 1 = 0$
- (vi) Find the distance between the pair of points $A(-2, -6), B(3, -6)$
- (vii) Find the distance between the pair of points $A(9, 2), B(7, 2)$
- (viii) Define S.A.S postulate.
- (ix) One angle of a parallelogram is 130° find measures of its remaining angles.

4. Write short answers to any SIX (6) questions. 12

- (i) Define bisector of an angle.
- (ii) 2cm, 3cm and 5cm are not lengths of the triangle. Give the reason.
- (iii) Define ratio.
- (iv) In triangle $\triangle LMN$, $MN \parallel PQ$ if $m\angle M = 5\text{cm}$, $m\angle P = 2.5\text{cm}$ and $m\angle Q = 2.3\text{cm}$, then find $m\angle N$.
- (v) State pythagoras theorem.
- (vi) Verify that $a=1.5\text{cm}, b=2\text{cm}, c=2.5\text{cm}$ are lengths of

right angles triangle.

(vii) Find area.



(viii) Define the incentre of the triangle.

(ix) Construct a triangle XYZ in which

$$m\overline{YZ} = 7.6\text{cm}, m\overline{XY} = 6.1\text{cm}, m\angle X = 90^\circ$$

PART-II

5. (a) Solve by using matrix inversion method: (4)

$$2x + y = 3$$

$$6x + 5y = 1$$

(b) Simplify:

$$\sqrt{\frac{(216)^{\frac{2}{3}} \times (25)^{\frac{1}{2}}}{(.04)^{-\frac{1}{2}}}}$$

6. (a) Find the value by using logarithm: 0.8176×13.64 . (4)

(b) If $m + n + p = 10$ and $mn + np + mp = 27$ find the value of $m^2 + n^2 + p^2$. (4)

7. (a) Factorize the cubic polynomial by factor theorem: (4)

$$x^3 - 2x^2 - x + 2$$

(b) Use division method to find the square root of the expression: $x^4 - 10x^3 + 37x^2 - 60x \div 36$ (4)

8. (a) Solve the equation: $x + \frac{1}{3} = 2\left(x - \frac{2}{3}\right) - 6x$ (4)

(b) Construct the triangle PQR and draw their altitudes: $mPQ = 6\text{cm}$, $mQR = 4.5\text{cm}$, $mPR = 5.5\text{cm}$ (4)

9. The right bisectors of the sides of a triangle are concurrent. (8)

OR Triangles on the same base and of the same (i.e., equal) altitudes are equal in area.