

Gujranwala Board 2017 (First Group)

Roll No.(in Figures): (in Words):

Maximum Marks: 70 (SUBJECTIVE TYPE) Time Allowed :2.10 Hours

PART - I

Q2. Write short answers to any SIX (6) questions: (2×6=12)

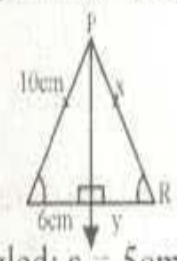
- (i) Define singular matrix.
- (ii) If $A = B = \begin{bmatrix} 0 & 7 \\ -3 & 8 \end{bmatrix}$, $A = \begin{bmatrix} 1 & -2 \\ 3 & 4 \end{bmatrix}$, then find $3A - 2B$.
- (iii) Simplify: $5^{2^3} \div (5^2)^3$
- (iv) Simplify and write your answer in the form of $a + bi$. $(-7+3i)(-3+2i)$
- (v) Find the value of 'a' $\log_a 6 = 0.5$
- (vi) Express in ordinary notation: 6×10^{-4}
- (vii) Reduce to the lowest form: $\frac{(x+y)^2 - 4xy}{(x-y)^2}$
- (viii) Simplify: $\sqrt{3}(2\sqrt{3} + 3\sqrt{3})$
- (ix) Factorize: $27 + 8x^3$

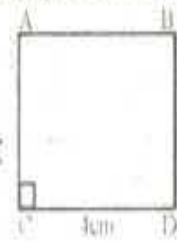
Q3. Write short answers to any SIX (6) questions: (2×6=12)

- (i) Define H.C.F
- (ii) Solve the equation: $\frac{3x}{2} - \frac{x-2}{3} = \frac{25}{6}$
- (iii) Solve the equation: $|3 + 2x| = |6x - 7|$
- (iv) Define ordered pair.
- (v) Find the values of m and c of the line expressing it in the form of $y = mx + c$: $2x = y = 3$
- (vi) Find the distance between the points: A(9,2), (B(7,2)
- (vii) Find the mid-point of: A(-4, 9), B(-4, -3)
- (viii) What is meant by S.A.S. postulate?
- (ix) One angle of a parallelogram is 130° . Find the measures of its remaining angles.

Q4. Write short answers to any SIX (6) questions: (2×6=12)

- (i) Define right bisector of a line segment.
- (ii) If 3cm and 4cm are lengths of two sides of a right angled triangle what should be the third side's length of the triangle.
- (iii) Define ratio.
- (iv) In isosceles triangle PQR shown in figure. Find the value of x and y
- (v) Define pythagoras theorem.
- (vi) Verify that triangle having following measures of sides is right angled: $a = 5\text{cm}$, $b = 12\text{cm}$, $c = 13\text{cm}$



- (vii) Find the area:  (viii) Construct triangle ABC in which $m\overline{AB} = 4.6\text{cm}$, $m\overline{AC} = 4\text{cm}$, $m\angle A = 60^\circ$

(ix) Define orthocentre. PART - II

Note: Attempt any three questions. Question number 9 is compulsory. (8×3=24)

- Q5. (a) Solve the system of linear equation by Cramer's rule: $2x + y = 3$, $6x + 5y = 1$ 4
- (b) Simplify: $\sqrt[3]{\frac{a^7}{a^m}} \times \sqrt[3]{\frac{a^m}{a^n}} \times \sqrt[3]{\frac{a^n}{a}}$ 4
- Q6. (a) Use log tables to find the value of $\sqrt[5]{2.709} \times \sqrt[3]{1.239}$ 4
- (b) If $x^2 + y^2 + z^2 = 78$ and $xy + yz + zx = 59$, then find the value of $x + y + z$ 4
- Q7. (a) Factorize by factor theorem: $2x^3 + x^2 - 2x - 1$ 4
- (b) Use division method to find the square root of the following expression: $4x^2 + 12xy + 9y^2 + 16x + 24y + 16$ 4
- Q8. (a) Solve the given equation: $\frac{1}{2}\left(x - \frac{1}{6}\right) + \frac{2}{3} = \frac{5}{6} + \frac{1}{3}\left(\frac{1}{2} - 3x\right)$ 4
- (b) Draw altitudes of triangle PQR, when $m\overline{QR} = 4.5\text{cm}$, $m\overline{PQ} = 6\text{cm}$ and $m\overline{PR} = 5.5\text{cm}$ 4
- Q9. Prove that, any point inside an angle, equidistant from its arms, is on the bisector of it. 8
- (OR) Prove that triangles on the same base and of the same altitudes are equal in area