

Sargodha Board 2018 (First Group)

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

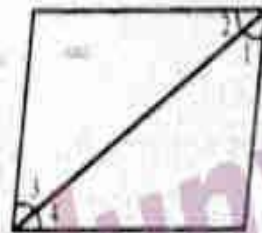
Maximum Marks: 60 **SUBJECTIVE TYPE (PART - I)** Time Allowed :2.10 Hours

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

- (i) Define matrix. (ii) Multiply: $\begin{bmatrix} 8 & 5 \\ 6 & 4 \end{bmatrix} \begin{bmatrix} 2 & -5 \\ -4 & 4 \end{bmatrix}$ (iii) Simplify: $\left(\frac{8}{125}\right)^{\frac{1}{3}}$
- (iv) Find the value of i^{50} . (v) Express in scientific notation 0.0074. (vi) Define binomial surd.
- (vii) Define Common logarithm. (viii) Rationalize the denominator $\frac{2}{\sqrt{5}+\sqrt{2}}$. (ix) Factorize $3x-24x^3$

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

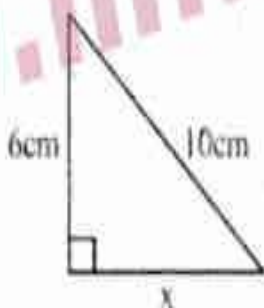
- (i) Find H.C.F. by factorization $x^2 + 5x + 6, x^2 - 4x - 12$
- (ii) Solve the equation and check for extraneous solution. $\sqrt{2x-3} - 7 = 0$
- (iii) Find solution set. $|3x - 5| = 4$ (iv) Define collinear points.
- (v) Find values of m and c after expressing line in the form $y = mx + c, 2x - y = 7$.
- (vi) Find the distance between the pair of points. A(9, 2), B(7, 2)
- (vii) Find the mid point of the line segment joining pair of points. A(2, -6), B(3, -6)
- (viii) If two angles of a triangle are 90° and 30° what will be the value of 3rd angle.



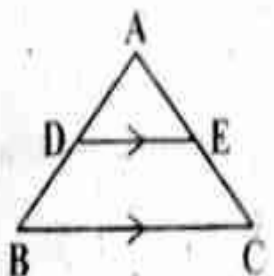
(ix) In figure find $m\angle 1 \cong \dots$, $m\angle 2 \cong \dots$.

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

- (i) Define right bisector of a line segment.
- (ii) Whether 2cm 4cm and 7cm can be lengths of the sides of a triangle? Give reason.
- (iii) Define proportion.
- (iv) State converse of Pythagoras theorem.
- (v) Find the value of x.
- (vi) Define rectangular region.
- (vii) Define the median of the triangle.
- (viii) Construct a $\triangle XYZ$ in which $m\overline{ZX} = 6.4\text{cm}$, $m\overline{YZ} = 2.4\text{cm}$, $m\angle Y = 90^\circ$.



(ix) In $\triangle ABC$, $\overline{DE} \parallel \overline{BC}$ if $m\overline{AD} = 2.4\text{cm}$, $m\overline{AE} = 3.2\text{cm}$, $m\overline{EC} = 4.8\text{cm}$, find $m\overline{AB}$.



PART - II

Note: Attempt any THREE questions in all. But question No.9 is Compulsory.

Q5. (a) Solve by Cramer's Rule. $2x - 2y = 4$; $3x + 2y = 6$ 4

(b) Simplify: $\sqrt{\frac{(216)^{\frac{2}{3}} \times (25)^{\frac{1}{2}}}{(.04)^{\frac{1}{2}}}}$ 4

Q6. (a) Evaluate with the help of Logarithm. 0.8176×13.64 4

(b) Simplify: $\frac{\sqrt{a^2+2} + \sqrt{a^2-2}}{\sqrt{a^2+2} - \sqrt{a^2-2}}$ 4

Q7. (a) If $(x + 2)$ is a factor of $3x^2 - 4kx - 4k^2$, then find the value(s) of k. 4

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

Q8. (a) Solve the equation. $\frac{2x}{2x+5} = \frac{2}{3} - \frac{5}{4x+10}, x \neq -\frac{5}{2}$ 4

(b) Construct the $\triangle ABC$ and draw the bisector of its angles. 4
 $m\overline{AB} = 4.2\text{cm}$, $m\overline{BC} = 6\text{cm}$ and $m\overline{CA} = 5.2\text{cm}$

Q9. Prove that the right bisectors of the sides of a triangle are concurrent. 8

(OR) Prove that parallelogram on the same base and between the same parallel lines (or of the same altitude) are equal in area.