Sargodha Board 2017 (Second Group)

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

Maximum Marks: 90   (SUBJECTIVE TYPE)   Time Allowed :2.10 Hours

PART - I

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

(i) Define Symmetric Matrix.

(ii) If $A = \begin{bmatrix} 1 & 2 \\ 0 & 1 \end{bmatrix}$ they verify $(A^t)^t = A$ (iii) Express the following decimal in the form of $\frac{p}{q}$ $0.\overline{23}$

(iv) Simplify $5^{2^3} \div (5^2)^3$ (v) Write in ordinary notation 6×10^{-4}

(vi) Find the value of x $\log_4 256 = x$ (vii) Change into the lowest form $\frac{(x+y)^2 - 4xy}{(x-y)^2}$

(viii) Simplify $\left(\sqrt{5} + \sqrt{3}\right)^2$ (ix) $4x^2 - (2y - z)^2$

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

(i) Define H.C.F   (ii) Solve the equation $\sqrt{2x - 3} - 7 = 0$

(iii) Solve for 'x' $|3x - 5| = 4$

(iv) Define an ordered pair.

(v) Find the value of m and c by expressing it in the form of $y = mx + c$. $2x + 3y - 1 = 0$

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

(vii) Find the mid point of A(9,2) , B(7,2)

(viii) What is meant by A.S.A postulate.   (ix) Define parallelogram.

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

(i) Define supplementary angles.

(ii) 3cm, 4cm and 7cm are not the lengths of the Triangle. Give the reason.

(iii) What is meant by similar Triangles?

(iv) In ΔLMN, $\overline{MN} \parallel \overline{PQ}$ In $m\overline{LM}$ = 6cm, $m\overline{LQ}$ = 2.5cm $m\overline{QN}$ = 5cm, Then find $m\overline{LP}$

(v) Write down the formula of Pythagoras Theorem.   (vi) Find the value of x.

(vii) Define area of a figure.

(viii) Construct a ΔXYZ, in which $m\overline{XY}$ = 5.5cm, $m\overline{ZX}$ = 4.5cm, $m\angle Z$ = 90°

(ix) Define the orthocentre of a Triangle.
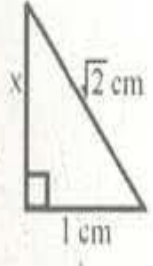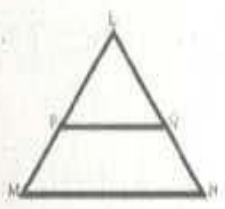
PART - II

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

Q5. (a) Solve the matrix by inversion method. $4x + y = 9$, $-3x - y = -5$ 4

(b) Show that $\left(\frac{x^a}{x^b}\right)^{a+b} \times \left(\frac{x^b}{x^c}\right)^{b+c} \times \left(\frac{x^c}{x^a}\right)^{c+a} = 1$ 4

Q6. (a) Find the value using Log table $\frac{0.678 \times 9.01}{0.0234}$ 4

(b) If $x + \frac{1}{x} = 3$ then find the value of $x^3 + \frac{1}{x^3} = ?$ 4

Q7. (a) Factorize $8x^3 + 60x^2 + 150x + 125$ 4

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

Q8. (a) Solve $\frac{5(x-3)}{6} - x = 1 - \frac{x}{9}$ 4

(b) Construct the triangle ABC. Draw the bisectors of their angles. $m\overline{AB}$=4.5cm $m\overline{BC}$=3.1cm $m\overline{CA}$=5.2cm 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 equal bases and of equal altitudes are equal in area.