Sargodha Board 2017 (First Group)

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

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

PART - I

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

(i) If $B=\begin{bmatrix}1\\-1\end{bmatrix}$ then find $B+\begin{bmatrix}-2\\3\end{bmatrix}$ (ii) Define square matrix with example.

(iii) Give a rational number between $\frac{3}{4}$ and $\frac{5}{9}$

(iv) Express $\frac{1}{1+2i}$ in the standard form a + b*i*

(v) Define scientific notation. (vi) Find the value of 'x' if $\log_{81} 9 = x$

(vii) What is the rational expression. (viii) Simplify $\frac{\sqrt{21}\sqrt{9}}{\sqrt{63}}$ (ix) Factorize $144a^2 + 24a + 1$

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

(i) Find H.C.F of the following expression $39x^7y^3z$ and $91x^5y^6z^7$

(ii) Solve the equation. $\sqrt[3]{2x+3} = \sqrt[3]{x-2}$

(iii) Solve $|2x + 3| = 11$

(iv) Find the value of m and c of $2x - y = 7$ by expressing it in the form of $y = mx + c$

(v) Define origin. (vi) Find the distance between the points A(-8 , 1) , B(6 , 1)

(vii) Define scalene triangle. (viii) State S.A.S Postulate. (ix) Define rectangle?

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

(i) Define Bisection of an angle.

(ii) Explain whether the given lengths can be the lengths of sides of a triangle. 3cm, 4cm, 5cm

(iii) Define similar Triangles. (iv) Differentiate between Ratio and Proportion.

(v) State converse of Pythagoras theorem.

(vi) Verify that triangle having the following measures of sides is right-angled. a=16cm,b=30cm,c= 34cm

(vii) Define Triangular Region. (viii) Construct a ΔABC $m\overline{AB} = 4.8cm$ $m\overline{BC} = 3.7cm$ $m\angle B = 60°$

(ix) Define the centroid of the triangle.

PART - II

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

Q5. (a) Solve by using matrix inversion method. $4x - 2y = 8$, $3x + y = -4$ 4

(b) Simplify $\left(\frac{a^{2l}}{a^{l+m}}\right)\left(\frac{a^{2m}}{a^{m+n}}\right)\left(\frac{a^{2n}}{a^{n+l}}\right)$ 4

Q6. (a) Find 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

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 $x^4 - 10x^3 + 37x^2 - 60x + 36$ 4

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

(b) Construct the ΔPQR and draw its altitude. $m\overline{PQ} = 6cm$ $m\overline{QR} = 4.5cm$ and $m\overline{PR} = 5.5cm$ 4

Q9. Prove that any point equidistant from the end points of a line segment is on the right bisector it. 8
Prove that Triangles on the same base and of the same (i.e., equal) altitudes are equal in area.