Faisalabad Board 2018 (Second 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) If $A=\begin{bmatrix}1 & -2\\ 3 & 4\end{bmatrix}$ and $B=\begin{bmatrix}0 & 7\\ -3 & 8\end{bmatrix}$ then find 3A – 2B.

(iii) Define real numbers.

(iv) Evaluate: i^{27}

(v) Express is scientific notation: 0.00643

(vi) Write in the form of single logarithm: log 5 + log 6 – log 2

(vii) Define polynomial.

(viii) Rationalize the denominator of $\frac{2}{\sqrt{5}+\sqrt{2}}$.

(ix) Factorize: $x^2 - a^2 + 2a - 1$

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

(i) Find the L.C.M. by factorization: $39x^7y^3z$, $91x^5y^6z^7$

(ii) Define equivalent equations.

(iii) Solve: $|2x + 5| = 11$

(iv) Draw (–3, –3) on graph paper.

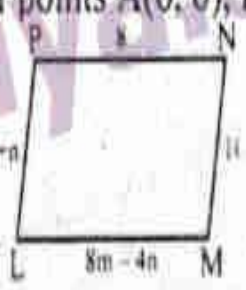
(v) Find the values of m and c of 3 – 2x + y = 0 by expressing it in the form of y = mx + c.

(vi) Define non-collinear points.

(vii) Find the mid-point of the line segment joining pairs of points A(6, 6), B(4, –2).

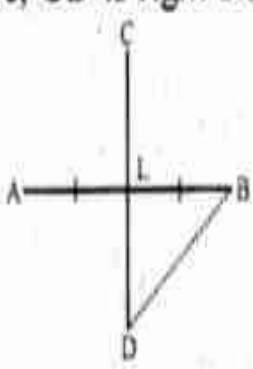
(viii) State S.A.S. postulate.

(ix) Find the value of m and n in parallelogram LMNP.



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

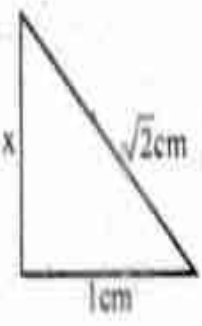
(i) In the given figure, $\overline{CD}$ is right bisector of the line segment $\overline{AB}$. If $m\overline{AB}$ = 6cm, then find the $m\overline{AL}$ and $m\overline{LB}$.



(ii) Define obtuse angle triangle.

(iii) Define similar triangles.

(iv) Find the value of x in the given figure.



(v) State Pythagoras Theorem.

(vi) Verify that triangle having the given measures of sides is right angled:
a = 5cm, b = 12cm, c = 13cm

(vii) Define the rectangular region.

(viii) Construct a triangle ABC in which: $m\overline{AB}$=3.2cm, $m\overline{BC}$=4.2cm, $m\overline{CA}$=5.2cm

(ix) Define incenter of the triangle.

PART - II

Note: Attempt any THREE questions in all. But question No.9 is Compulsory. **(3 × 8 = 24)**

Q5. (a) Solve by using Cramer's rule: 2x – 2y = 4, 3x + 2y = 6 4

(b) Simplify: $\left(\frac{a^p}{a^q}\right)^{p+q}\left(\frac{a^q}{a^r}\right)^{q+r}+\left(a^p.a^r,\right)^{p-r}, a\neq 0$ 4

Q6. (a) Use log tables to find the value of: 0.8176 × 13.64 4

(b) If x + y = 7 and xy = 12, then find the value of $x^3 + y^3$. 4

Q7. (a) Factorize: $(x^2 - 4x - 5)(x^2 - 4x - 12) - 144$ 4

(b) Find the value of k for which the given expression will be a perfect square: 4
$4x^4 - 12x^3 + 37x^2 - 42x + k$

Q8. (a) Solve the inequality: $4x - 1 \leq 3 \leq 7 + 2x$, where $x \in R$ 4

(b) Construct triangle PQR and draw its altitudes: $m\overline{PQ}$=6cm, $m\overline{QR}$=4.5cm, $m\overline{PR}$=5.5cm 4

Q9. Prove that any point on the right bisector of a line segment is equidistant from its end points. 8

(OR) Prove that triangles on equal bases and of equal altitudes are equal in area.