LIONS SCHOOL MIRZAPUR

HALF YEARLY EXAMINATIONS 2021-22

TERM -1

CLASS-IX

TIME: 3 HOURS

SUB-MATHEMATICS

M.M: 80

GENERAL INSTRUCTION:-

1. *This question paper contains two parts A and B.*
2. *Part - B have internal choices.*

PART:-A

1. *It consists of two section I and II.*
2. *Section I has 16 questions which will be one mark.*
3. *Section II has four case study –based questions. Each case study has 5 case-based sub -parts . A examinee is to attempt 4 out of 5 sub parts .*

PART:-B

1. *Question no 21 to 26 are very short answer type questions of 2 marks each.*
2. *Question no 27 to 33 are short answer type questions of 3 marks each.*
3. *Question no 34 to 36 are long answer type questions of 5 marks each.*

PART A – (SECTION-I)

1. Is every rational number is a whole number ? Justify your answer.

2. Find only one solution of 4x + 3y =5.

3. Sum of the ordinates of points (3, 3) and (4 ,7).

4. Can a triangle have two obtuse angles ? Give reason.
5. Is the AAA property of congruency of triangle?
6. If area of square field is $400\,m^2$, then find the length diagonal of field.
7. Find the sum of first six odd natural number.
8. Point (1 , k) lies on the line $3x-8y=-2, then\, find\, the\, value\, of\, k$.
9. Find the distance of the point P (2 , 5) from the Y-axis.
10. If sides of triangle are 3m , 4m and 5m then find the area of the triangle.
11. In triangle $\Delta PQR \in which$ PQ= PR and angle R= 60 degree , then find the angle Q.
12. Diagonal of a square is 8 cm , then find its area.
13. Find the value of $\sqrt{8}$X $\sqrt{24}$.
14. How many solution of $2x+5y=8$ has?
15. In which quadrants , the abscissa of a point is negative ?
16. Write the formula of area of rhombus.

(SECTION –II)

(Case study based questions are compulsory . Attempt any four sub parts from each question. Each question carry 1 mark.)

17. Sanya has a piece of land whose shape is rhombus . She want her one daughter and one son to work on the land and produce different crops . She divided the land in two equal parts . Perimeter of land is 400 m and one diagonal is 160 m , then find the following:-

(a) Each side of land will be

1. 100m 2. 200m 3. 20m 4. None

(b) Semiperimeter of land will be

1. 200m 2. 300m 3. 150m 4. None

(c) Length of other diagonal will be

1. 120m 2. 140 m 3. 160m 4. None

(d) Area of land will be

1. 9600 sqm 2. 4800 sqm 3. 1600 sqm 4. None

(e) Sum of diagonal will be

1. 280m 2. 180 m 3. 100 m 4. None

18. A linear equation is the form $2x+3y=6$ and standard form of linear equation in two variable becomes $ax+by+c=0$.Then find the following:-

(a) Value C will be

1. -6 2. 6 3. 3 4. None

(b) If $x=0$, then values of 'y ' will be

1. 2 2. 3 3. 6 4. None

(c) When the above line meets the X-axis, then coordinate on X-axis

1. (3,0) 2. (0,3) 3. (2,0) 4. None

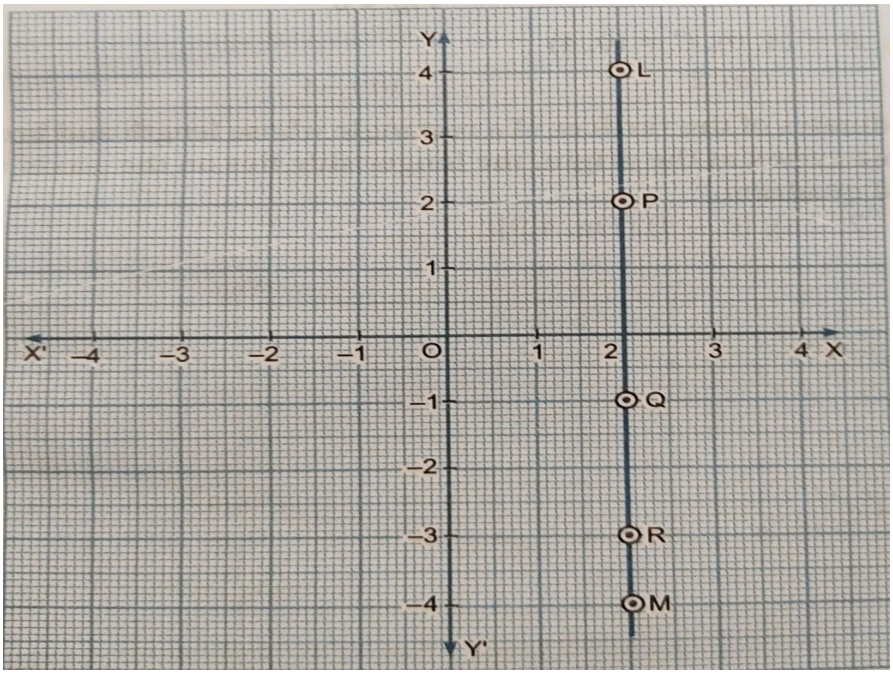
(d) Value of (a + c) will be

1. -4 2. 4 3. 5 4. None

(e) If $y=2$ then value of x will be

1. 0 2. 3 3. 6 4. None

19. LM is a line. This line LM is parallel to Y-axis. Line LM is at a distance of 2 units. PQR are the points on this line. Find the followings:-



(a) Coordinate of P

1. (2,2) 2. (2,0) 3. (0,2) 4. None

(b) Coordinate of L

1. (2,4) 2. (4,0) 3. (4,4) 4. None

(c) Sum of ordinates of point P and L

1. 6 2. 4 3. 0 4. None

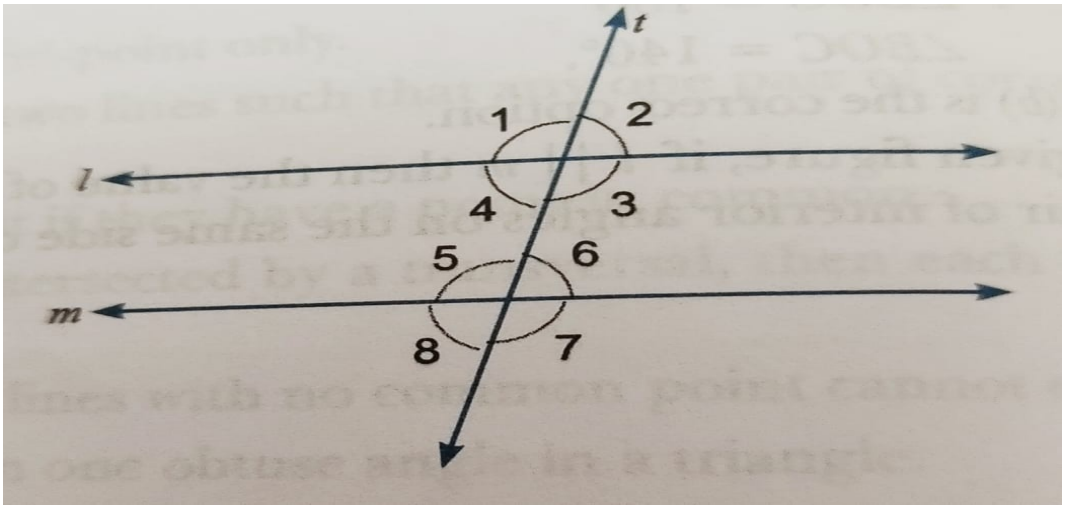
(d) What is the difference between the abscissa of the point L and M

1. 0 2. 3 3. 4 4. None

(e) Coordinate of R will lie in

1. I quadrent 2. II quadrent 3. III quadrent 4. None

20. In figure, l and m are the two lines which is parallel to each other. A transversal t is not intersecting at 90°,then find the followings:-



(a) Vertically opposite angles are

1. 5 and 7 2. 1 and 3 3. both 1 and 2
4. None

(b) Adjacent angles are
1. 1 and 2 2. 3 and 6 3. 3 and 5
4. None

(c) Alternate interior angles are
1. 4 and 6 2. 2 and 8 3. Both 1 and 2
4. None

(d) Sum of angle 3 and 6 will be
1. 180° 2. 90° 3. Less than 180°
4. None

(e) Sum of all angles will be
1. 720° 2. 360° 3. 380°
4. None

(PART –B)

(All questions are compulsory . In case of internal choice , attempt any one.)

21. Find the complement of $72°$.
22. Each side of an equilateral triangle is $2\sqrt{3}$ cm , then find its altitude.
23. The angles of a triangle are in the ratio 2 : 3 :7 , then find the nature of triangle.
24. Divide $8\sqrt{15}$ by $2\sqrt{3}$
25. Find the value of k , if $x=2 \wedge y=-1 \, is \, a \, solution \, of \, 3xk+5y=-2k$.
26. A line $3x-5y-1=0$ cut to the y-axis at the point P, then find the coordinate of this point.
27. If $x=¿$) , then find the value of $\left(x-\frac{1}{x}\right)^2$.
28. Write the two solution of $4x-5y-15=0$.
29. Write the coordinate of the vertices of a square whose each side is 5 units , one vertex at (2 , 1) and all the vertices lie in the same quadrant.
30. If the bisector of angles B and C of a triangle ABC meet at a point O , then prove that

$$¿BOC-\frac{1}{2}(¿A)=90°$$

31. Prove that the medians of an equilateral triangle are equal.
32. The perimeter of a triangle is 50 cm . One side of a triangle is 4 cm longer than the smaller side and third side is 6 cm less than twice the smaller side , find the area of the triangle.
33. Simplify:- $\frac{7+3\sqrt{5}}{3+\sqrt{5}}+¿\ \frac{7-3\sqrt{5}}{3-\sqrt{5}}$
34. The length of 62 leaves of a plant are measured in millimetres and the data is the following table :-

Length (in mm)	Number of leaves
118-126	8
127-135	10

136- 144	12
145- 153	17
154- 162	7
163- 171	5
172- 180	3

Draw a histogram to represent the above data.

35. Draw the graph of $x=3y-4, \wedge find\ the\ value\ of\ y\ when\ x=-1 \wedge also$

find the value of $x, when\ y=5$.

36. A field is in the shape of a trapezium , its parallel sides are 25m and 10m and non parallel sides are 14m and 13m . Find the area of the field.