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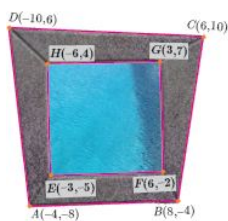
Exam Time : 03:00:00 Hrs

Total Marks : 32

32 x 5 = 160

I. ANSWER ALL QUESTION

- 1) If the points P(-1, -4), Q (b, c) and R(5, -1) are collinear and if $2b + c = 4$, then find the values of b and c.
- 2) Find the area of the quadrilateral formed by the points (8, 6), (5, 11), (-5, 12) and (-4, 3).
- 3) The given diagram shows a plan for constructing a new parking lot at a campus. It is estimated that such construction would cost Rs. 1300 per square feet. What will be the total cost for making the parking lot?
- 4) Find the area of the quadrilateral whose vertices are at (-9, -2), (-8, -4), (2, 2) and (1, -3)
- 5) Find the value of k, if the area of a quadrilateral is 28 sq.units, whose vertices are (-4, -2), (-3, k), (3, -2) and (2, 3)
- 6) If the points A(- 3, 9) , B(a, b) and C(4, - 5) are collinear and if $a + b = 1$, then find a and b.
- 7) In the figure, the quadrilateral swimming pool shown is surrounded by concrete patio. Find the area of the patio.



- 8) Without using Pythagoras theorem, show that the vertices (1, - 4) , (2, - 3) and (4, - 7) form a right angled triangle.
- 9) Prove analytically that the line segment joining the mid-points of two sides of a triangle is parallel to the third side and is equal to half of its length.
- 10) Show that the given points form a parallelogram : A(2.5, 3.5) , B(10, - 4), C(2.5, -2.5) and D(-5, 5)
- 11) If the points A(2, 2), B(-2, -3), C(1, -3) and D(x, y) form a parallelogram then find the value of x and y.
- 12) Let A(3, - 4), B(9, - 4) , C(5, - 7) and D(7, - 7). Show that ABCD is a trapezium.
- 13) A quadrilateral has vertices A(- 4, - 2), B(5, - 1), C(6, 5) and D(- 7, 6). Show that the mid-points of its sides form a parallelogram.
- 14) A line makes positive intercepts on coordinate axes whose sum is 7 and it passes through (-3,8). Find its equation
- 15) A circular garden is bounded by East Avenue and Cross Road. Cross Road intersects North Street at D and East Avenue at E. AD is tangential to the circular garden at A(3, 10). Using the figure.

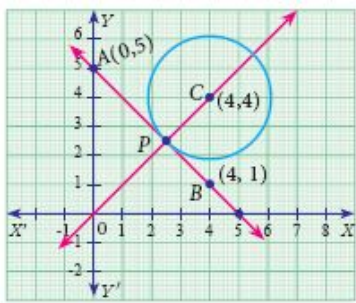


Find the equation of

- (i) East Avenue.
- (ii) North Street
- (iii) Cross Road

- 16) Find the equation of the median and altitude of ΔABC through A where the vertices are A(6, 2), B(-5,-1) and C(1, 9)
- 17) You are downloading a song. The percent y (in decimal form) of mega bytes remaining to get downloaded in x seconds is given by $y = -0.1x + 1$.
Graph the equation.
- 18) Find the equation of a straight line Passing through (1, -4) and has intercepts which are in the ratio 2:5

19) The line joining the points A(0,5) and B(4,1) is a tangent to a circle whose centre C is at the point (4,4) Find the equation of the line AB.



- 20) A(-3, 0) B(10, - 2) and C(12, 3) are the vertices of ΔABC . Find the equation of the altitude through A and B.
- 21) Find the equation of the perpendicular bisector of the line joining the points A(-4, 2) and B(6, -4).
- 22) Find the equation of a straight line through the intersection of lines $7x + 3y = 10$, $5x - 4y = 1$ and parallel to the line $13x + 5y + 12 = 0$
- 23) Find the equation of a straight line through the intersection of lines $5x - 6y = 2$, $3x + 2y = 10$ and perpendicular to the line $4x - 7y + 13 = 0$
- 24) Find the equation of a straight line joining the point of intersection of $3x + y + 2 = 0$ and $x - 2y - 4 = 0$ to the point of intersection of $7x - 3y = - 12$ and $2y = x + 3$
- 25) Find the equation of a straight line through the point of intersection of the lines $8x + 3y = 18$, $4x + 5y = 9$ and bisecting the line segment joining the points (5, -4) and (-7, 6).
- 26) Without using distance formula, show that points (-2, -1) , (4, 0), (3, 3) and (-3, 2) are the vertices of a parallelogram
- 27) Find the equation of a line passing through the point of intersection of the lines $4x + 7y - 3 = 0$ and $2x - 3y + 1 = 0$ that has equal intercepts on the axes.
- 28) A person standing at a junction (crossing) of two straight paths represented by the equations $2x - 3y + 4 = 0$ and $3x + 4y - 5 = 0$ seek to reach the path whose equation is $6x - 7y + 8 = 0$ in the least time. Find the equation of the path that he should follow.
- 29) A mobile phone is put to use when the battery power is 100%. The percent of battery power 'y' (in decimal) remaining after using the mobile phone for x hours is assumed as $y = - 0.25 x + 1$
Find the number of hours elapsed if the battery power is 40%.



- 30) Find the area of the quadrilateral whose vertices are at (-9, 0), (-8, 6), (-1, -2) and (-6, -3)
- 31) Find the equation of a straight line parallel to X-axis and passing through the point of intersection of the lines $7x - 3y = -12$ and $2y = x + 3$.
- 32) Find the equation of the line passing through (22, -6) and having intercept on x-axis exceeds the intercept on y-axis by 5 units.

ALL THE BEST
