# Coordinate Geometry

**Straight Line**

**MCQ-Single Correct**

1. Let k be an integer such that the triangle with vertices (k,-3k), (5,k) and (-k,2) has area 28 sq units. Then the orthocentre of this triangle is at the point :

(1)  (2) 

(3)  (4)  **[2017]**

2. Two sides of a rhombus are along the lines, and . If its diagonals intersect at (-1,-2), then which one of the following is a vertex of this rhombus?

(1) (-3,-8) (2) 

(3)  (4) (-3,-9) **[2016]**

3. Locus of the image of the point (2,3) in the line , , is a :

(1) straight line parallel to y-axis (2) circle of radius .

(3) circle of radius  (4) straight line parallel to x-axis. **[2015]**

4. Let a, b, c and d be non-zero numbers. If the point of intersection of the lines  and  lies in the fourth quadrant and is equidistant from the two axes then

(1)  (2) 

(3)  (4)  **[2014]**

5. Let PS be the median of the triangle with vertices P(2,2), Q(6,-1) and R(7,3). The equation of the line passing through (1,-1) and parallel to PS is

(1)  (2) 

(3)  (4)  **[2014]**

6. The x-coordinate of the incentre of the triangle that has the coordinates of mid points of its sides as (0,1) (1,1) and (1,0) is

(1)  (2) 

(3)  (4)  **[2013]**

7. A ray of light along  gets reflected upon reaching x-axis, the equation of the reflected rays is

(1)  (2) 

(3)  (4)   **[2013]**

8. If the line  passes through the point which divides the line segment joining the points (1,1) and (2,4) in the ration 3:2, then k equal

(1) 6 (2) 11/5

(3) 29/5 (4) 5 **[2012]**

9. A line is drawn through the point (1,2) to meet the coordinate axes at P and Q such that it forms a triangle OPQ, where O is the origin. If the area of the triangle OPQ is least, then the slope of the line PQ is

(1) -2 (2) -1/2

(3) -1/4 (4) -4 **[2012]**

10. The lines  and  intersect each other in the first quadrant. Then the set of all possible values of a is the interval

(1)  (2) 

(3)  (4)  **[2011]**

11. If A(2,-3) and B(-2,1) are two vertices of a triangle and third vertex moves on the line , then the locus of the centroid of the triangle is

(1)  (2) 

(3)  (4)  **[2011]**

12. The line L given by  passes through the point (13,32). The line K is parallel to L and has the equation . Then the distance between L and K is

(1)  (2) 

(3)  (4)  **[2010]**

13. Three distinct points A, B and C are given in the 2-dimensional coordinate plane such that the ratio of the distance of any one of them from the point (1,0) to the distance from the point (-1,0) is equal to . Then the circumcentre of the triangle ABC is at the point

(1) (0,0) (2) 

(3)  (4)  **[2009]**

14. The lines  and are perpendicular to a common line for

(1) no value of p (2) exactly one value of p

(3) exactly two values of p (4) more than two values of p **[2009]**

15. The perpendicular bisector of the line segment joining P(1,4) and Q(k,3) has y-intercept . Then a possible value of k is

(1) 1 (2) 2

(3) -2 (4) -4 **[2008]**

16. A straight line through the point A(3,4) is such that its intercept between the axes is bisected at A. Its equation is

(1)  (2) 

(3)  (4)  **[2006]**

17. The two lines , ; and ,  are perpendicular to each other if

(1)  (2) 

(3)  (4)  **[2006]**

18. If  falls inside the angle made by the lines ,  and , x>0, then a belongs to

(1)  (2) 

(3)  (4)  **[2006]**

19. The line parallel to the x-axis and passing through the intersection of the lines and , where is

(1) below the x-axis at a distance of  from it

(2) below the x-axis at a distance of  from it

(3) above the x-axis at a distance of  from it

(4) above the x-axis at a distance of  from it **[2005]**

20. If non-zero numbers a, b , c are in H.P. , then the straight line always passes through a fixed point. The point is

(1) (-1,2) (2) (-1,-2)

(3)  (4)  **[2005]**

21. If a vertex of a triangle is (1,1) and the mid-points of two sides through this vertex are (-1,2) and (3,2), then the centroid of the triangle is

(1)  (2) 

(1)  (2)  **[2005]**

22. If the pair of lines  lie along diameters of a circle and divide the circle into four sectors such that the area of one of the sectors is thrice the areas of another sector then

(1)  (2) 

(3)  (4)  **[2005]**

23. Let A(2,-3) and B(-2,1) be vertices of a triangle ABC. If the centroid of this triangle moves on the line , then the locus of the vertex C is the line

(1)  (2) 

(3)  (4)  **[2004]**

24. The equation of the straight line passing through the point (4,3) and making intercepts on the co-ordinate axes whose sum is -1 is

(1)  and  (2)  and 

(3)  and  (3)  and  **[2004]**

25. If the sum of the slopes of the lines given by is four times their product, then c has the value

(1) 1 (2) -1

(3) 2 (4) -2 **[2004]**

26. If one of the lines given by is , then c equals

(1) 1 (2) -1

(3) 3 (4) -3 **[2004]**

27. If the equation of the locus of a point equidistant from the points  and is , then the value of ‘c’ is

(1)  (2) 

(3)  (4)  **[2003]**

28. Locus of centroid of the triangle whose vertices are ,  and (1,0), where t is a parameter , is

(1)  (2) 

(3)  (4)  **[2003]**

29. If the pair of straight lines and be such that each pair bisects the angle between the other pair, then

(1) p = q (2) p = -q

(3) pq = 1 (4) pq = -1 **[2003]**

30. A square of side a lies above the x-axis and has one vertex at the origin. The side passing through the origin makes an angle   with the positive direction of x-axis. The equation of its diagonal not passing through the origin is

(1) 

(2) 

(3) 

(4)  **[2003]**

31. If the pair of lines  intersect on the y-axis then

(1)  (2) 

(3) abc = 2fgh (4) none of these **[2002]**

32. Lines represented by are Ʇ to each other for

(1) two values of a (2) a

(3) for one value of a (4) for no values of a **[2002]**

33. Locus of mid-point of the portion between the axes of , where p is constant, is

(1)  (2) 

(3)  (4)  **[2002]**

34. A triangle with vertices (4,0) , (-1,-1), (3,5) is

(1) isosceles and right angled (2) isosceles but not right angled

(3) right angled but not isosceles (4) neither right angled nor isosceles **[2002]**