

IITJEE Foundation Practice paper

**COORDINATE GEOMETRY**

class-10th-Mathematics    Number of Questions: 70

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**1**

If two vertices of a triangle are  $(-4, 3)$  and  $(2, 6)$  and centroid is origin, then the third vertex is \_\_\_\_

- $(2, -9)$      $(-2, -9)$      $(-2, 9)$      $(0, -3)$

**2**

The ratio in which a point  $(4, 5)$  divides the line joining  $(2, 3)$  and  $(7, 8)$  is

- $2 : 3$      $3 : 2$      $4 : 5$      $5 : 7$

**3**

The ratio in which  $x$  - axis divides the line segment joining  $(2, 6)$  and  $(12, -3)$  is \_\_\_\_\_

- $1 : 2$      $3 : 1$      $2 : 1$      $1 : 1$

**4**

$x$  - coordinate of centroid of a triangle whose vertices are  $(-4, 4)$ ,  $(-2, 2)$  and  $(6, 12)$  is \_\_\_\_

- $3$      $4$      $5$      $0$

5

The centroid of the triangle whose sides are given by  $x = 0, y = 0, x + y = 9$  is \_\_\_\_

- (2,2)  (3,3)  (1,1)  (5,5)

6

If A(4,3) B(3,4) C(-3,-4) are vertices of a triangle then the area of the triangle is \_\_sq. units

- 6  8  7  9

7

Area of the triangle formed by the points (0,0)(4,0)(0,3) is \_\_\_\_\_sq. units

- 6  12  8  0

8

If  $(x, y)$  is equidistant from the points (6,-1) (2,3) then find the relation of x and y

- $x + y = 2$    $x - y = 3$    $x - y = 0$    $x = 2y$

9

If A  $(0, \sin 31^\circ)$ , B  $(-\sin 59^\circ, 0)$  are two points, then slope of AB is \_\_\_\_\_

- $\sin 45^\circ$    $\sin 30^\circ$    $\sin 60^\circ$    $\sin 90^\circ$

10

Perimeter of a triangle with vertices (0,4)(0,0) and (3,0) is \_\_\_\_\_units

- 8  10  12  15

**11**

Distance between (4,0) and (x,0) is 5 units. the value of x =

- 1 or 9    4    ±3    5

**12**

Distance between the line  $2x + 4 = 0$  and  $x - 5 = 0$  is \_\_\_\_\_

- 1 unit    9 units    7 units    5 units

**13**

If A(2,3) B(4, K) and C(6, -3) are collinear then k =

- 1    -1    2    0

**14**

Centroid of the triangle formed (9, a) (b, -4) (7,8) is (6,8) then a + b =

\_\_\_\_\_

- 20    22    21    25

**15**

Find a point which divides line joining P(3,2) Q(6, -1) internally in the ratio 1: 2

- (4,1)    (1,4)    (2,4)    (4,2)

**16**

If  $x > 0$ ,  $y < 0$  point (x,y) lies in

- Q<sub>1</sub>    Q<sub>2</sub>    Q<sub>3</sub>    Q<sub>4</sub>

**17**

If  $\frac{x}{a} + \frac{y}{2a} = 1$  passing through the point (1, -3),

then  $a =$  \_\_\_\_\_

- $\frac{-1}{3}$      $\frac{1}{3}$      $\frac{-1}{2}$      $\frac{1}{2}$

**18**

$3y + 4x = 1$ ,  $y = x + 5$  and  $5y + kx = 3$  are concurrent then  $k =$

- 7    9    6    3

**19**

The angle made by the line  $\sqrt{3}x - y + 5 = 0$  with positive  $x$  - axis is

- $60^\circ$      $70^\circ$      $80^\circ$      $90^\circ$

**20**

Two ends of diameter of circle are  $(3,2)$   $(5,-4)$ , then the center is

- $(4,1)$      $(5,1)$      $(5,-1)$      $(4,-1)$

**21**

If the angle between  $5x + 3y - 2 = 0$ ,  $3x - ky + 3 = 0$  is  $90^\circ$  then  $k =$

- 5    -5    -3    3

**22**

Area of the triangle formed by straight line  $3x - 4y - 12 = 0$  and the coordinate axes is \_\_\_ sq. units

- 5    4    6    9

**23**

Equation of the line passing through  $(2,0)$  with slope 3 is

- $y - 3x + 6 = 0$      $x - 6y + 7 = 0$      $x + y = 7$      $x - y = 2$

24

Slope of  $\frac{x}{a} + \frac{y}{b} = 1$  is \_\_\_\_\_

- $\frac{-b}{a}$      $\frac{-a}{b}$     1    -1

25

If A( 7,5) B (2,4 ) C( 7, K ) , AB = AC then.....

- $k^2 - 10k - 1 = 0$      $k^2 + 10k - 1 = 0$      $k^2 - 1 = 0$      $k^2 - 10k - 10 = 0$

26

Slope of the line joining the points  $(-a, a)(0, a + a\sqrt{3})$  is \_\_\_\_\_

- $\sqrt{2}$      $\sqrt{3}$      $\sqrt{5}$      $\sqrt{6}$

27

Centroid of a triangle (1,4) and two vertices are (4, -3) and (-9,7), then the third vertex is

- (6,6)    ( 8, 8 )    (9,9)    (4,4)

28

The coordinates of the point which divides the join of (2,1) and (3,5) externally in the ratio 3 : 2 is \_\_\_\_\_

- (13,5)    (2,12)    (1,13)    (5, 13)

29

If  $7x - y + 11 = 0$  and  $px + qy = 1$  are two parallel lines, then  $\frac{p}{q} =$  \_\_\_\_\_

- 7    6    -7    8

30

If  $x + ky = 1$  and  $2x - 3y = 1$  are perpendicular, then  $k = ?$

- $\frac{2}{3}$      $\frac{3}{2}$      $\frac{5}{2}$      $\frac{2}{5}$

**31**

In  $3x + 5y = 15$ , find x intercept

- 3    4    5    7

**32**

If  $(3, a)$  lies on the line  $2x - 3y = 5$ , then find 'a'

- $-\frac{1}{3}$      $\frac{1}{4}$      $\frac{1}{3}$      $\frac{1}{2}$

**33**

Area of the triangle whose vertices are  $(a, b + c)$ ,  $(b, c + a)$ ,  $(c, a + b)$

\_\_\_\_\_

- 4 sq units    0 sq units    2 sq units    3 sq units

**34**

If  $(1, 2)(4, y)(x, 6)(3, 5)$  are vertices of a parallelogram taken in order then  $x =$

- 6    5    4    -6

**35**

Find the value of  $y$ , when the distance between two points  $P(2, -3)$   $Q(10, y)$  is 10 units

- 8    -9    -10    11

**36**

If the points  $(a, 0)$   $(0, b)$   $(1, 1)$  are collinear, then  $\frac{1}{a} + \frac{1}{b} =$

- 0    2    3    1

37

Find the distance between two points  $(0, \sqrt{3})$  and  $(\sqrt{3} + 1, 1)$

- $3\sqrt{2}$      $2\sqrt{2}$      $4\sqrt{2}$      $5\sqrt{2}$

38

Distance between two points  $(\sin 29^\circ, 0)$  and  $(0, \sin 61^\circ)$  is \_\_\_\_

- 2    3    1    4

39

The point common to both the lines  $x - y + 1 = 0$  and  $x + y - 2 = 0$  is

- $(2, 5)$      $\left(\frac{1}{2}, \frac{3}{2}\right)$      $(1, 4)$      $(3, 4)$

40

If the line represented by  $2x - 3y = k$  passing through a point  $(1, -2)$  then  $k =$  \_\_\_\_

- 7    6    8    4

41

Area of the triangle formed by a line  $x + y = 4$  and coordinate axis is \_\_\_\_ sq. units

- 8    12    8    10

42

If  $(p, 2)$ ,  $(-3, 4)$ ,  $(7, -1)$  are collinear points, then  $P =$  \_\_\_\_

- 1    1    2    3

43

What is the slope of a line making an angle  $135^\circ$  with positive x-axis ?

- 2   $\frac{1}{3}$   -1  1

44

The line  $ax + by + c = 0$  cuts Y- axis at

- $(0, a)$    $\left(0, \frac{-c}{a}\right)$    $(0, b)$    $\left(0, \frac{-c}{b}\right)$

45

Find the point of intersection of medians whose vertices are  $(1, -2)$   $(-5, 1)$   $(1, 4)$  \_\_\_\_

- $(2, 2)$    $(-1, 1)$    $(-3, 1)$    $(2, -1)$

46

If  $A(1, 1)$   $B(3, 5)$   $C(4, 8)$  are the vertices of  $\triangle ABC$ , D and E are the mid points of AB, AC then the slope of DE =

- 3  2  -3  4

47

The points which divides a line segment into three equal parts are said to be

- Mid points  Internal division  External division  Trisectional points

48

Area of the triangle whose vertices  $(0, 0)$   $(x, 0)$  and  $(0, y)$  is \_\_\_\_

- $x - y$    $\frac{1}{2}|xy|$    $xy$    $x + y$



49

Area of the right angled triangle AOB is 16 sq units. If 'O' is the origin and the coordinate of A is (8,0), find the coordinate of B

- (0,3)  (0,5)  (0,6)  (0,4)

50

If D(4, 3), E ( 3, 2) , F (2, 4) are the mid points of BC, CA and AB then vertices of A =

- (2,3)  (2,5)  (3,1)  (1,3)

51

Find the angle between the lines  $3x + 6y + 7 = 0$ ,  $4x - 2y + 9 = 0$

- 30°  90°  45°  60°

52

If slope of (3, 2) ,(4, a ) is 2, then a =

- 4  3  2  -4

53

In a rectangle ABCD if slope of  $AB = \frac{3}{4}$  then slope of BC =

- $\frac{4}{3}$    $-\frac{4}{3}$    $-\frac{3}{4}$    $\frac{4}{2}$

54

If (2014, 2014), (2015, 2015) , (2016, 2016) are vertices of a triangle then find the area of the triangle

- 1  0  2  3

55

The perpendicular bisector of the line segment joining the points (1,5), (4,6) cuts Y-axis at

- (0,12)  (0, 13)  (0,10)  (0,11)

56

Which type of triangle is formed with these vertices (-5 , 0) (5, 0) (0, 4) ?

- Scalene triangle  Equilateral triangle  Isosceles triangle  Rightangle triangle

57

If  $(0, 0)(3, \sqrt{3})(3, P)$  are the vertices of an equilateral triangle, then  $P =$

- $\sqrt{5}$    $\sqrt{7}$    $\pm\sqrt{3}$    $\sqrt{2}$

58

Coordinate geometry is \_\_\_\_\_ tool for studying geometry.

- mensuration  an algebraical  zero  1

59

Co-ordinate geometry was introduced by

- Ronald A.Fisher  Euclid  Rene Descartes  Thales

60

The distance between (0, 0) and (x, y) is

- 0 units   $\sqrt{x^2 + y^2}$  units   $x + y$  units  None

61

If (2, 3) is one end of the diameter of the circle and centre of the circle is (0, 0) then other end is

- (-2, -3)  (2, 3)  (3, 2)  (-3, -2)

**62**

In a co-ordinate plane horizontal line is called

- Abscissa  Y-axis  X-axis  Ordinate

**63**

In a co-ordinate plane vertical line is called

- Abscissa  Y-axis  X-axis  Ordinate

**64**

Which of the following point is nearest to origin?

- (1, 1)  (2, 0)  (-3, 0)  (0, -5)

**65**

The end points of diameter of a circle are (4, 5), (-2, -3) then the radius of the circle is \_\_\_ units.

- 2  3  4  5

**66**

The co-ordinates of origin are

- (0, 0)  (1, 1)  (2, 2)  None

**67**

If two lines are parallel then their slopes are

- unequal  equal  can't say  none

**68**

If two lines are perpendicular then product of their slopes is

- 1  2  -2  -1

**69**

If the lines  $a_1x + b_1y + c_1 = 0$  and  $a_2x + b_2y + c_2 = 0$  are parallel then

- $a_1b_2 = a_2b_1$      $a_1a_2 = b_1b_2$      $a_1b_1 = a_2b_2$     None

**70**

If the lines  $a_1x + b_1y + c_1 = 0$  and  $a_2x + b_2y + c_2 = 0$  are perpendicular then

- $a_1b_2 - a_2b_1 = 0$      $a_1a_2 + b_1b_2 = 0$      $a_1a_2 - b_1b_2 = 0$   
  $a_1b_2 + a_2b_1 = 0$

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