CHAPTER-10
STRAIGHT LINES
01 MARK TYPE QUESTIONS

Q. NO	QUESTION	MARK
1.	Two lines are said to be parallel if the difference of their slope is a)-1 b) 1 c) 0 d) None	1
2.	If A(6, 4) and B(2, 12) are the two points, then the slope of a line perpendicular to line AB is a)-2 b)2 d) ½ d)-1/2	1
3.	Find the equation of lines passing through (1,2) and making angle 30° with Y-axis.	1
4.	Calculate the slope of a line, that passes through the origin, and the mid-point of the segment joining the points P (0, -4) and B (8, 0).	1
5.	The locus of a point, whose abscissa and ordinate are always equal is (a) $x + y + 1 = 0$ (b) $x – y = 0$ (c) $x + y = 1$ (d) none of these.	1
6.	Two lines $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ are coincedent if (a) $a_1/a_2 = b_1/b_2 \neq c_1/c_2$ (b) $a_1/a_2 \neq b_1/b_2 = c_1/c_2$ (c) $a_1/a_2 \neq b_1/b_2 \neq c_1/c_2$ (d) $a_1/a_2 = b_1/b_2 = c_1/c_2$	1

7.	What can be said regarding a line if its slope is negative?
	    a. θ is an acute angle
	    b. θ is an obtuse angle
	    c. Either the line is x-axis or it is parallel to the x-axis.
	    d. None of these
		1

8.	Find the equation of line passing through point (0 , 0) having slope m is	1
9.	The perpendicular distance of a line 4X - 3Y + 5 = 0 from the point (2 , 1) is a) 7/5 b) 9 / 4 c) 2 d) 1	1
10.	The Fahrenheit temperature F and absolute temperature K satisfy a linear equation. Given that K = 273 when F = 32 and that K = 373 when F = 212.Express find the value of F, when K = 0.	1
11.	A line passes through the point (2, 2) and is perpendicular to the line 3x + y = 3. Its y intercept is a) $\frac{1}{3}$ b) 5 c) $\frac{3}{4}$ d) $\frac{4}{3}$	1
12.	The area of a triangle whose vertices are (3, -2), (5, 6) and (-2, -5) is a) 15 sq. units b) 16 sq. units c) 17 sq. units d) 18 sq. units	1
13.	The figure form by the lines ax ± by ± c = 0 is a) a rectangle b) a square c) a rhombus d) none of these	1
14.	The line segment joining the points (- 3, - 4) and (1 - 2) is divided by y-axis in the ratio a) 1: 3 b) 2: 3 c) 3: 1 d) 3: 2	1

15.	The points which divide the join of (1, 2) and (3, 4) externally in the ratio 1: 1 a) lies in the 3rd quadrant b) lies in the 2nd quadrant c)lies in the 1st quadrant d) cannot be found	1
16.	Area of the triangle formed by the points ((a + 3) (a + 4), (a + 3)), ((a + 2) (a + 3), (a + 2)) and ((a + 1) (a + 2), (a + 1)) is a) $25a^2$ b) $5a^2$ c) $24a^2$ d) none of these	1
17.	If the point (5, 2) bisects the intercept of a line between the axes, then its equation is a) 5x + 2y = 20 b) 2x + 5y = 20 c) 5x - 2y = 20 d) 2x - 5y = 20	1
18.	The angle between the lines 2x - y +3 = 0 and x + 2y + 3 = 0 is a) 90° b) 60° c) 45° d) 30°	1

19.	The line segment joining the points (1, 2) and (- 2, 1) is divided by the line 3x + 4y = 7 in the ratio
	    a) 3: 4 b) 4: 3
	    c) 9: 4 d) 4: 9
		1

20.	The centroid of a triangle is (2, 7) and two of its vertices are (4, 8) and (- 2, 6). The third vertex is a) (0, 0) b) (4, 7) c) (7, 4) d) (7, 7)	1
21.	Slope of a line which cuts off intercepts of equal lengths on the axes is (a) –1 (b) 0 (c) 2 (d) √3	1
22.	y-intercept of the line 4x – 3y + 15 = 0 is (a) –15/4 (b) 15/4 (c) –5 (d) 5	1
23.	The equation of the line passing through the point (2, 3) with slope 2 is (a) 2x + y – 1 = 0 (b) 2x – y + 1 = 0 (c) 2x – y – 1 = 0 (d) 2x + y + 1 = 0	1
24.	The equation of the line which cuts off equal and positive intercepts from the axes and passes through the point (α, β) is (a) x + y = α + β (b) x + y = α (c) x + y = β (d) None of these	1
25.	Two lines are perpendicular if the product of their slopes is (a) 0	1

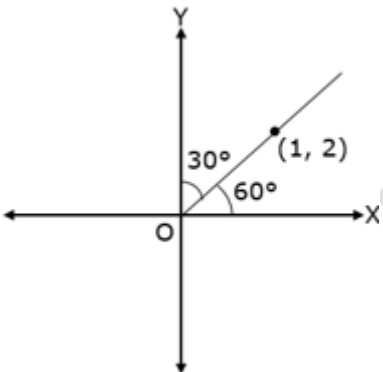|		
	(b) 1 (c) −1 (d) None of these	
26.	The intercept cut off by a line from y-axis is twice than that from x-axis, and the line passes through the point (1, 2). The equation of the line is (a) 2x + y = 4 (b) 2x + y + 4 = 0 (c) 2x − y = 4 (d) 2x − y + 4 = 0	1
27.	What can be said regarding if a line if its slope is zero (a) θ is an acute angle (b) θ is an obtuse angle (c) Either the line is x-axis or it is parallel to the x-axis. (d) None of these	1
28.	The distance between the two parallel lines 2x + y − 5 = 0 and 2x + y + 10 = 0 is (a) √5 (b) 3√5 (c) 2√5 (d) 4√5	1
29.	The equation of the line passing through the point (1,2) and perpendicular to the line x +y + 1 = 0 is (a) y−x +1=0 (b) y − x−1=0 (c) y−x + 2 = 0 (d) y − x − 2=0	1
30.	The inclination of the line x − y + 3 = 0 with the positive direction of x-axis is (a) 45° (b) 135° (c) − 45° (d) −135°	1
31.	If the straight lines ax-2y=1 and 6x-4y=b are identical, then (a) a=3, b=2 (b) a= -3, b=2 (c) a=3, b= -2 (d) a= -3, b= -2	1
32.	The equation of a line which makes an angle of 45^0 With x-axis and cuts the y-axis at (0, 3) is (a) x=3 (b) y=3 (c) y=x+3 (d) None of these	1
33.	The magnitude of the angle that the line $\sqrt{3}x + y - 1 = 0$ makes with the positive direction of x-axis is (a) 150^0 (b) 30^0 (c) 60^0 (d) 120^0	1
34.	Equation of the straight line which passes through thr point (3,2) and parallel to x-axis is (a) x=3 (b) x+3=0 (c) y-2=0 (d) y+2=0	1
35.	The area of the triangle made by the straight line 2x+3y-12=0 with the co-ordinate axes is (a) 12 sq.units (b)16 sq.units (c)8 sq.units (d)6 sq.units	1
36.	Find the value of K so that the line 2x+ky−9=0 may be parallel to 3x−4y+7=0.	1
37.	What is the equation of a line whose perpendicular distance from the origin is 5 units and	1

	angle between the positive direction of the x-axis and the perpendicular is 30^0.	
38.	The foot of the perpendicular drawn from origin on the line x+y=2 is (a) (2,-1) (b) (-2, 1) (c) (1, 1) (d) (1, 2)	1
39.	The angle between the lines y=x and y= - x is (a) $\frac{\pi}{4}$ (b) $\frac{2\pi}{3}$ (c) $\frac{\pi}{6}$ (d) $\frac{\pi}{2}$	1
40.	P(a, b) is the midpoint of a line segment between axes. Then the equation of the line is (a) $\frac{x}{c}+\frac{y}{d}=1$ (b) $\frac{x}{a}+\frac{y}{b}=1$ (c) $\frac{x}{a}+\frac{y}{b}=2$ (d) $\frac{x}{c}+\frac{y}{d}=2$	1
41.	1)Which one of the following is the nearest point on the line 3x-4y=25 form the origin? (a) (-1,-7) (b) (3,-4) (c) (-5,-8) (d) (3,4)	1
42.	Let A(1,k) , B(1,1) and C(2,1) be the vertices of the right angled triangle with AC as its hypotenuse. If the area of the triangle os 1 sq unit, then the set of values which 'k' can take is given by (a) {-1,3} (b) {-3,-2} (c) {1,3} (d) {0,2}	1
43.	ABC is an isosceles triangle. If the coordinate of the base are B(1,3) and C(-2,7), the coordinate of the vertex A can be (a) (1,6) (b)(-1/2, 5) (c) (5/6,6) (d) None of these.	1
44.	Slope of non-vertical line passing through the points (x_1,y_2) and (x2,y2) is given by: (a) m=$\frac{y2-y1}{x2-x1}$ (b) m=$\frac{x2-x1}{y2-y1}$ (c) m=$\frac{y2+y1}{x2+x1}$ (d) m=$\frac{y2-y1}{x2+x1}$	1
45.	If a line with slope m makes x-intercepts d. then the equation of line is (a) y=$m(d-x)$ (b) y=$m(x-d)$ (c) y=$m(d+x)$ (d) y=mx+d	1
46.	The inclination of the line x-y+3=0 with the positive direction of x axis is . (a) 45^0 (b) 135^0 (c) -45^0 (d) -135^0	1
47.	A line passes through P(1,2) such that its intercept between the axes is bisected at P. The equation of the line is ; (a) x+2y=5 (b) x-y+1=0 (c) x+y-3=0 (d) 2x+y-4=0	1
48.	Line through the points (-2,6) and (4,8) is perpendicular to the line through the points (8,12) and (x,24). find the values of x. (a) 2 (b) 3 (c) 4 (d) 5	1
49.	The relation between a, b, a' and b' such that the two lines ax + by = c and a'x + b'y = c' are perpendicular is (A) aa'-bb'=0 (b) aa'+bb'=0 (c)ab+a'b'=0 (d)ab-a'b'=0	1
50.	If the points (x,y), (1,2) and collinear (-3,4) are collinear, then (a) x+2y -5=0 (b) x+y-1=0 (c) 2x+y-4=0 (d) 2x-y+10=0	1
51.	Slope of a line which cuts off intercepts of equal lengths on the axes is a) -1 b) 0 c) 1 d) 2	1
52.	The value of y so that the line through (3,y) and (2,7) is parallel to the line through (-1,4) and (0,6) is:	1

	a) 8 b) 9 c) -9 d) -8	
53.	Equation of the line parallel to x-7y+5=0 and having x- intercept 3 a) x-7y +3=0. b) 3x-7y -3=0. c) x-7y -5=0 d) x-7y -3=0.	1
54.	Find the angle between the lines y- √3 x -5 =0 and √3 y –x +6 =0. (A) 60　　(B) 120　　(C) 150　　(D) none of these	1
55.	The slope of the line 8x- 4y+5 =0 is: (A) 1　　　　(B) 2　　　　(C) -1　　　　(D) - 2	1
56.	The equation of the line which is parallel to y-axis and passing through the point (3,-4) is a) x=-3　　b) y=3　　c) x= 3　　d) y=-3	1
57.	The x- intercept of the line 5x -4y-5=0 is a) 5　　　　b)1　　　　c)-1　　　　d)4	1

58.	Find the equation of the line intersecting x-axis at a distance of 3 units to the left of the origin with slope -2.
	
	   a)　2x+y+6=0
	   b)　2x – y +6 =0
	   c)　2x + y – 6 =0
	   d)　X+ y+ 3 =0
		1

59.	Find the equation of the right bisector of the line segment joining the points (3,4) and (-	1

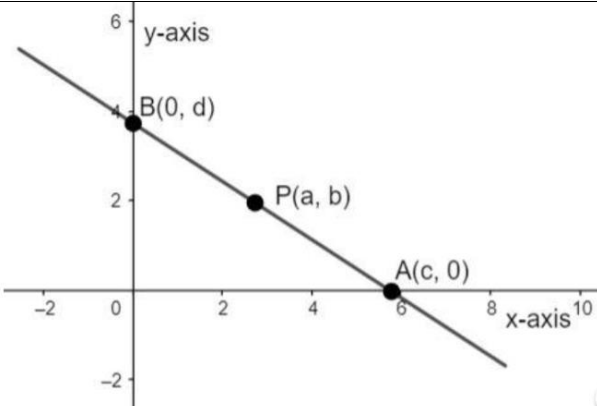|		
	1,2). (A) 2x – y – 5 =0 (B) 2x + y – 5 =0 (C) x + y – 5 =0 (D) 2x + 3y – 5 =0	

60.	Assertion (A). The slope of a line passing through two points (-5, 2) and (3,-2) is −1/2
	
	Reason (R). The slope of a line passing through two given points (x1, y1) and (x2, y2) is $(x2−x1)/(y2−y1)$
	
	   a) Both A and R are true and Ris the correct explanation of A.
	   b) Both Aand R are true but R is not correct explanation of A.
	   c) A is true but R is false
	   d) A is false but R is true.
		1

Q. NO	ANSWER	MARKS
1.	**0**	**1**
2.	**d) ½**	**1**
3.	**Given that line passing through (1, 2) making an angle 30° with y – axis.** **Angle made by the line with x – axis is (90° - 30°) = 60°** **Slope of the line, m = tan 60° = √3 So, the equation of the line passing through the point (x1, y1) and having slope 'm' is y – y1 = m(x – x1) .** **Here, (x1, y1) = (1, 2) and m = √3** **⇒ y – 2 = √3(x – 1)** **⇒ y – 2 = √3x - √3** **⇒ √3x – y - √3 + 2 = 0** 	**1**
4.	**Given that,** **The coordinates of the mid-point of the line segment joining the points P (0, -4) and B (8, 0) are:** **[(0+8)/2 , (-4+0)/2] = (4, -2)** **It is known that the slope (m) of a non-vertical line passing through the points (x1, y1) and (x2, y2) is given by the formula** **m = (y2 -y1) / ((x2 -x1), where (x2 is not equal to x1)** **Therefore, the slope of the line passing through the points (0, 0,) and (4, -2) is** **m= (-2-0)/(4-0)** **m= -2/4** **m= -½** **Hence, the required slope of the line is -1/2**	**1**
5.	**Let, the point P is (h,k)** **Given:Abscissa=Ordinate** **⇒h=k** **h−k=0** **⇒x−y=0 is the locus of a point whose abscissa and ordinate are always equal.**	**1**
6.	**(d) a1/a2 = b1/b2 = c1/c2**	**1**

7.	**b. θ is an obtuse angle**	1
8.	**Y= mX**	1
9.	**Correct option is B)**	1
	The distance d between the line AX+BY+C=0 and point (X1 , Y1) is given by	
	d=$\|\frac{AX1+BY1+C}{\sqrt{A^2+B^2}}\|$	
	Therefore, Required distance=$\frac{4x2\,(-3)x1+5\|}{\sqrt{2^2}+1^2}$ = 10/5 = 2	
	Option B is correct.	
10.	**F = -459.4**	1
11.	D	1
12.	C	1
13.	C	1
14.	C	1
15.	D	1
16.	D	1
17.	B	1
18.	A	1
19.	D	1
20.	B	1
21.	(a) -1	1
22.	(d) 5	1
23.	(c) $2x - y - 1 = 0$	1
24.	(a) $x + y = \alpha + \beta$	1
25.	(c) -1	1
26.	(a) $2x + y = 4$	1
27.	(c) Either the line is x-axis or it is parallel to the x-axis	1
28.	(b) $3\sqrt{5}$	1
29.	**(b) y − x−1=0**	1
30.	(a) $45°$	1
31.	a.	1
32.	c	1
33.	d	1
34.	c	1
35.	a	1
36.	Given,	1
	The Equations of two parallel lines are 2x+ky−9=0 and 3x−4y+7=0	
	Slope of the line is given by $m = \frac{-(co\,efficient\,of\,X)}{co\,efficient\,of\,Y}$	
	According to the question,	
	Slope of 1st line = slope of 2nd line	
	$$\frac{-2}{k} = \frac{-3}{-4} => k = \frac{-8}{3}$$	
37.	Given,	1
	Perpendicular distance of the line from the origin is 5 units.	

	Angle between the positive direction of the x-axis and the perpendicular is 30^0. Hence, $p=5, \alpha=30^0$ Required equation is given by x cosα + y sinα=p. Xcos30^0+ysin30^0=5 $\sqrt{3}x + y - 10 = 0$.	
38.	c	1
39.	d	1
40.	 Given, Mid-point of a line segment between axes P(a,b) ATQ, Let P be the mid-point of A(c,0) and B(0,d) Required equation is $\frac{x}{a} + \frac{y}{b} = 1$; i.e., $\frac{x}{c} + \frac{y}{d} = 1$ ………….(i) Where, x−intercept = a y−intercept = b Coordinate of P= $(\frac{c}{2}, \frac{d}{2})$ [∵ mid- point] ∴(a,b)= $(\frac{c}{2}, \frac{d}{2})$ c=2a d=2b Put the value of c and d in equation (i) $\frac{x}{2a} + \frac{y}{2b} = 1 => \frac{x}{a} + \frac{y}{b} = 2$. Ans: Option-(c)	1
41.	(b) (3,-4)	1
42.	(a)	1
43.	(c)	1
44.	(a)	1
45.	(b)	1
46.	(a)	1
47.	(d)	1
48.	(C)	1
49.	(b)	1
50.	(a)	1
51.	a	1
52.	b	1

53.	d	1
54.	c	1
55.	b	1
56.	c	1
57.	b	1
58.	a	1
59.	b	1
60.	c	1