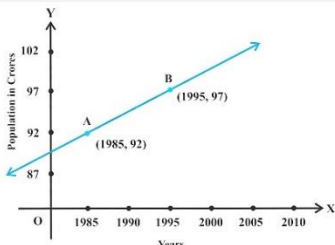
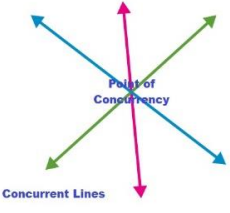


CBT CLASS XI MATHS NOVEMBER-2023

GENERAL INSTRUCTION :
CHAPTER: STRAIGHT LINE

Sr.No	Question	Marks
	<p>Case Study 1 Consider the following population and year graph , Based on the information given below answer the following questions</p> 	
1	<p>The slope of line AB is (a) 2 (b) 1 (c) 1/2 (d) 1/3</p>	1
2	<p>The equation of line AB is (a) $x + 2y = 1791$ (b) $x - 2y = 1801$ (c) $x - 2y = 1791$ (d) $x - 2y + 1801 = 0$</p>	1
3	<p>The population in the year 2010 (in crores) (a) 104.5 (b) 119.5 (c) 109.5 (d) none of these</p>	1
4	<p>The equation of line perpendicular to line AB & passing through (1995, 97) is (a) $2x - y = 4087$ (b) $2x + y = 4087$ (c) $2x + y = 1801$ (d) none of these</p>	1
	<p>Case Study 2 If the lines $2x + y - 3 = 0$, $5x + ky - 3 = 0$ and $3x - y - 2 = 0$ are concurrent, then give the answer of following questions</p> 	
5	<p>Point of intersection of lines $2x + y - 3 = 0$ and $3x - y - 2 = 0$ is* (a) (-1,-1) (b) (1,1) (c) (-1,1) (d) (1,-1)</p>	1
6	<p>Que.6. In above Question, If lines $2x + y - 3 = 0$, $5x + ky - 3 = 0$ and $3x - y - 2 = 0$ are concurrent than value of k is (a) $k = -1$ (b) $k = -2$ (c) $k = 2$ (d) $k = 1$</p>	1
7	<p>Que.7. Perpendicular bisectors of three sides of triangle are concurrent, so point of concurrency of the Perpendicular bisectors is called (a) Centroid (b) Orthocenter (c) Circumcenter (d) Incenter</p>	1
8	<p>Que.8. If value of $k = -5/2$ than slope of line $5x + ky - 3 = 0$ is (a) 5 (b) -5 (c) -2 (d) 2</p>	1

	<p>Directions: (Q.9 – Q.10) Each of these questions contains two statements: Assertion (A) and Reason (R). Each of these questions also has four alternative choices, any one of which is the correct answer . You have to select one of the options (a) , (b) , (c) and (d) given below :</p> <p>(a) A is true , R is true and R is a correct explanation for A (b) A is true , R is true and R is not a correct explanation for Assertion (c) A is true and R is false (d) A is false and R is true</p>	
9	<p>Que 9: Assertion(A): The angle between the lines $\sqrt{3}x + y = 1$ & $x + \sqrt{3}y = 1$ is 45° Reason(R): The angle (say θ) between line :L_1 and line: L_2 with slope m_1 and m_2, respectively, is given by $\tan\theta = (m_1 - m_2)/(1 + m_1 m_2)$ (a) (b) (c) (d)</p>	1
10	<p>Que 10: Assertion(A): if equation of line is $5x + 7y = 35$ then x intercept of line is 7 Reason(R): $y = mx + c$ is slope- intercept form of line and c is length of intercept on Y- axis, above the origin (a) (b) (c) (d)</p>	1

Answer Key

Ans1	(c)
Feedback	Option c is correct, since Slope of line because slope of line = $(y_2 - y_1)/(x_2 - x_1) = 5/10 = 1/2$
Ans2	(b)
Feedback	Option b is correct, since equation of line passes through two points is $y - y_1 = m(x - x_1)$ where $m = (y_2 - y_1)/(x_2 - x_1)$ and equation of line is $x - 2y = 1801$
Ans3	(a)
Feedback	The option (a) 104.5 crore is correct Since, the line AB passes through points A(1985,92) and B(1995,97), its slope is 1/2, and equation of line is $x - 2y = 1801$, put $x = 2010$ than value of y is 104.5
Ans4	(b)
Feedback	Option (b) is correct, Since the slope of line perpendicular to $x - 2y = 1801$ is -2, (because product of slopes of two perpendicular line is -1), hence equation of line passes through (1995,97) and slope is -2 is $2x + y = 4087$
Ans5	(b)
Feedback	Option (b) is correct, the point of intersection of two lines $2x + y - 3 = 0$ and $3x - y - 2 = 0$ is to find by elimination method and $x = 1$ and $y = 1$
Ans6	(b)
Feedback	Option b is Correct, Since point of intersection of lines $2x + y - 3 = 0$, and $3x - y - 2 = 0$ is (1, 1). therefore put $x = 1$ and $y = 1$ in $5x + ky - 3 = 0$ than $5 \times 1 + k = 3$ $k = 3 - 5 = -2$
Ans7	(c)
Feedback	Option c is Correct. Perpendicular bisectors of three sides of triangle are concurrent, so point of concurrency of the Perpendicular bisectors is called circumcenter.
Ans8	(d)
Feedback	Option d is correct, because when value of k is -5/2 than equation of line $5x + ky - 3 = 0$ can be written as $5x - 5/2 y - 3 = 0$ $5/2 y = 5x - 3$, $y = 2x + 6/5$ hence slope = 2
Ans9	(d)
Feedback	Option d is Correct, since Assertion is false, (Here angle between line is 30° or 150°) and Reason is true
Ans10	(b)
Feedback	Option b is correct, i.e. A is true , R is true and R is not a correct explanation for Assertion

