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MCQs – Ch # 4: F.Sc Part 2

CALCULUS AND ANALYTIC GEOMETRY, MATHEMATICS 12

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Choose the correct answer.

1. The study of the properties of space and figure in space is called
(a) Algebra (b) Geometry (c) Trigonometry (d) None of these
2. If (x, y) are coordinates of a point P, then x-coordinate is also called
(a) Ordinate (b) Ordered pair (c) Abscissa (d) None of these
3. If $x > 0, y < 0$ then $p(x, y)$ is in
(a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) 4th quadrant
4. Distance between $A(x_1, y_1)$ and $B(x_2, y_2)$ is given by
(a) $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ (b) $\sqrt{(x_2 + x_1)^2 + (y_2 + y_1)^2}$
(c) $\sqrt{(x_2 - y_2)^2 + (x_1 - y_1)^2}$ (d) none of these
5. $\sqrt{73}$ is the distance between
(a) (-1,2) and (7,5) (b) (2,-6) and (7,5) (c) (-1,2) and (2,-6) (d) none of these
6. The study of the geometry with the help of algebra is known as
(a) Analytic geometry (b) Algebra (c) Trigonometry (d) none of these
7. Number of the books written by Euclid on geometry is
(a) 11 (b) 12 (c) 13 (d) 14
8. Mid point of the points $A(x_1, y_1)$ and $B(x_2, y_2)$ is
(a) $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ (b) $\left(\frac{x_1 - x_2}{2}, \frac{y_1 - y_2}{2}\right)$ (c) $\left(\frac{x_1 - y_1}{2}, \frac{x_2 - y_2}{2}\right)$ (d) None of these
9. The co-ordinate Axes divide the plane into
(a) 3 quadrants (b) 4 quadrant (c) 8 quadrant (d) None of these
10. The centroid of ΔABC divides each median in the ratio
(a) 1:2 (b) 2:1 (c) 2:2 (d) 1:1
11. The angle bisectors of a triangle are
(a) Concurrent (b) Non concurrent (c) Parallel (d) Perpendicular
12. If origin of axes is shifted to another point in plane but axes remains parallel to old axes then it is
(a) Translation of axes (b) Rotation of axes (c) Principle axes (d) None of these
13. The angle measured counterclockwise from the x-axes to non-horizontal line l is
(a) Inclination of l (b) Slope of l (c) Equation of l (d) None of these
14. Slope of the line along y-axis is
(a) 0 (b) 1 (c) ∞ (d) None of these
15. Slope of the line l is negative if
(a) $0 < a < 90^\circ$ (b) $90^\circ < a < 180^\circ$ (c) $0 < a < 180^\circ$ (d) None of these
16. If slope of AB=Slope of AC, then A, B and C are
(a) Non-collinear (b) Collinear (c) Same (d) None of these
17. Two lines l_1 and l_2 with slopes m_1 and m_2 are perpendicular if
(a) $m_1 m_2 = -1$ (b) $m_1 = m_2$ (c) $m_1 + m_2 = 1$ (d) None of these
18. Equation $y = a$ represent a straight line which is parallel to
(a) y-axis (b) x-axis (c) both a and b (d) None of these
19. Equation of the straight line perpendicular to x-axis is
(a) $x = a$ (b) $y = b$ (c) both a and b (d) None of these
20. If a line intersects x-axis at a point (a,0) then a is called
(a) y-intercept (b) x-intercept (c) slope (d) None of these

21. $y - y_1 = m(x - x_1)$ represents
(a) Slope intercept form (b) Point slope form (c) Two points form (d) None of these

22. $x\cos a + y\sin a = r$ represents
(a) Slope intercept form (b) Point slope form (c) Normal form (d) None of these

23. Two lines $l_1 : a_1x + b_1y + c_1 = 0$ and $l_2 : a_2x + b_2y + c_2 = 0$ are perpendicular if
(a) $a_1b_2 - b_1a_2 = 0$ (b) $a_1a_2 + b_1b_2 = 0$ (c) $a_1b_1 + a_2b_2 = 0$ (d) None of these

24. When x-intercept=3 and y-intercept=2 then equation of line is
(a) $\frac{x}{2} + \frac{y}{3} = 1$ (b) $\frac{x}{2} - \frac{y}{3} = 1$ (c) $\frac{x}{3} + \frac{y}{2} = 1$ (d) none of these

25. The point $P(x_1, y_1)$ is above the line $ax + by + c = 0$ if
(a) $ax_1 + by_1 + c > 0$ (b) $ax_1 + by_1 + c < 0$ (c) $ax_1 + by_1 + c = 0$ (d) None of these

26. Distance between the point $P(x_1, y_1)$ and the line $ax + by + c = 0$ is
(a) $\frac{|ax_1 + by_1 + c|}{\sqrt{a^2 + b^2}}$ (b) $\frac{|ax_1 + by_1 + c|}{\sqrt{a^2 - b^2}}$ (c) $|ax_1 + by_1 + c| = 0$ (d) None of these

27. If area of the triangular region is zero then its vertices are
(a) Collinear (b) Non-collinear (c) Concurrent (d) None of these

28. A quadrilateral having two parallel and two non parallel sides is called
(a) Square (b) Rectangle (c) Trapezium (d) None of these

29. Equation of the line passing through (-6,5) with slope 7 is
(a) $7x - y + 47 = 0$ (b) $7y - x + 47 = 0$ (c) $7x + y - 47 = 0$ (d) None of these

30. Given lines $2x + y - 3 = 0,\ 4x + 2y + 5 = 0$ are
(a) Parallel (b) Perpendicular (c) Non parallel (d) None of these

31. Angle between two non-vertical lines with slopes m_1 and m_2 is
(a) $\tan^{-1}\left(\frac{m_2 + m_1}{1 + m_1m_2}\right)$ (b) $\tan^{-1}\left(\frac{m_2 - m_1}{1 + m_1m_2}\right)$ (c) $\left(\frac{m_2 - m_1}{1 - m_1m_2}\right)$ (d) None of these

32. If the angle between the two lines is zero then the lines are
(a) Parallel (b) Perpendicular (c) Non parallel (d) None of these

33. $ax^2 + 2hxy + by^2 = 0$ is a homogeneous equation of the degree
(a) 1 (b) 2 (c) 3 (d) None of these

34. An angle a is acute if
(a) $a < 90^o$ (b) $a > 90^o$ (c) $a = 90^o$ (d) None of these

35. Rotation of the co-ordinates axis about origin through an angle is called
(a)Rotation of axis (b)Translation of axis (c) both a and b (d) None of these

36. If $y = b, b < 0$, then line is _____ the x-axis
(a) Above (b) Below (c) Right (d) Left

37. Slope of the line $ax + by + c = 0$ is
(a) $\frac{a}{b}$ (b) $\frac{b}{a}$ (c) $-\frac{a}{b}$ (d) $-\frac{b}{a}$

38. An_____ number of lines can pass through a point
(a) 0 (b) 1 (c) Finite (d) Infinite

39. Orthocentre is the point of intersection of _____ of a triangle
(a) Angle bisectors (b) Altitudes (c) Medians (d) None of these

40. Co-ordinate geometry and Analytic geometry are not_____
(a) Different (b) Same (c) Both of above (d) None of these