ARTHI EDUCATIONAL CENTER KATTUPUTHUR

unit 5,6 creative one mark

10th Standard

Date : 27-Mar-24

Reg.No. : | | | | | | |

Maths

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Time : 01:00:00 Hrs

Total Marks : 161

I.Answer All The Question

161 x 1 = 161

1) The area of triangle formed by the points (−5, 0), (0, −5) and (5, 0) is

(a) 0 sq.units **(b) 25 sq.units** (c) 5 sq.units (d) none of these

2) A man walks near a wall, such that the distance between him and the wall is 10 units. Consider the wall to be the Y axis. The path travelled by the man is

(a) x = 10 (b) y = 10 (c) x = 0 (d) y = 0

3) The straight line given by the equation x = 11 is

(a) parallel to X axis **(b) parallel to Y axis** (c) passing through the origin (d) passing through the point (0,11)

4) If (5, 7), (3, p) and (6, 6) are collinear, then the value of p is

(a) 3 (b) 6 **(c) 9** (d) 12

5) The point of intersection of 3x − y = 4 and x + y = 8 is

(a) (5, 3) (b) (2, 4) **(c) (3, 5)** (d) (4, 4)

6) The slope of the line joining (12, 3), (4, a) is $\frac{1}{8}$. The value of 'a' is

(a) 1 (b) 4 (c) -5 **(d) 2**

7) The slope of the line which is perpendicular to a line joining the points (0, 0) and (– 8, 8) is

(a) –1 **(b) 1** (c) $\frac{1}{3}$ (d) -8

8) If slope of the line PQ is $\frac{1}{\sqrt{3}}$ then slope of the perpendicular bisector of PQ is

(a) $\sqrt{3}$ **(b)** $-\sqrt{3}$ (c) $\frac{1}{\sqrt{3}}$ (d) 0

9) If A is a point on the Y axis whose ordinate is 8 and B is a point on the X axis whose abscissae is 5 then the equation of the line AB is

(a) 8x + 5y = 40 (b) 8x - 5y = 40 (c) x = 8 (d) y = 5

10) The equation of a line passing through the origin and perpendicular to the line 7x - 3y + 4 = 0 is

(a) 7x - 3y + 4 = 0 (b) 3x - 7y + 4 = 0 **(c) 3x + 7y = 0** (d) 7x - 3y = 0

11) Consider four straight lines

(i) l_1 : 3y = 4x + 5

(ii) l_2 : 4y = 3x - 1

(iii) l_3 : 4y + 3x =7

(iv) l_4 : 4x + 3y = 2

Which of the following statement is true?

(a) l_1 and l_2 are perpendicular (b) l_1 and l_4 are parallel **(c) l_2 and l_4 are perpendicular** (d) l_2 and l_3 are parallel

12) A straight line has equation 8y = 4x + 21. Which of the following is true

(a) The slope is 0.5 and the y intercept is 2.6 (b) The slope is 5 and the y intercept is 1.6

(c) The slope is 0.5 and the y intercept is 1.6 (d) The slope is 5 and the y intercept is 2.6

13) When proving that a quadrilateral is a parallelogram, it is necessary to show

(a) Two sides are parallel **(b) Two parallel and two non-parallel sides** (c) Opposite sides are parallel

(d) All sides are of equal length

14) When proving that a quadrilateral is a parallelogram by using slopes you must find

(a) The slopes of two sides **(b) The slopes of two pair of opposite sides** (c) The lengths of all sides

(d) Both the lengths and slopes of two sides

15) (2, 1) is the point of intersection of two lines.

(a) x - y - 3 = 0; 3x - y - 7 = 0 **(b) x + y = 3; 3x + y = 7** (c) 3x + y = 3; x + y = 7 (d) x + 3y - 3 = 0; x - y - 7 = 0

16) The value of $sin^2\theta + \frac{1}{1+tan^2\theta}$ is equal to

(a) $tan^2\theta$ **(b) 1** (c) $cot^2\theta$ (d) 0

17) tan θ cosec$^2\theta$ - tanθ is equal to

(a) secθ (b) $cot^2\theta$ (c) sinθ **(d)** $cot\theta$

18) If sin θ + cosθ = a and sec θ + cosec θ = b, then the value of b(a^2 - 1) is equal to

(a) 2a (b) 3a (c) 0 (d) 2ab

19) If 5x = secθ and $\frac{5}{x}$ = tanθ, then x^2 - $\frac{1}{x^2}$ is equal to

(a) 25 **(b)** $\frac{1}{25}$ (c) 5 (d) 1

20) If sin θ = cos θ, then 2 tan^2 θ + sin^2 θ -1 is equal to

(a) $\frac{-3}{2}$ **(b)** $\frac{3}{2}$ (c) $\frac{2}{3}$ (d) $\frac{-2}{3}$

21) If x = a tanθ and y = b secθ then

(a) $\frac{y^2}{b^2} - \frac{x^2}{a^2} = 1$ (b) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ (c) $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ (d) $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 0$

22) (1 + tan θ + secθ) (1 + cotθ - cosecθ) is equal to

(a) 0 (b) 1 **(c) 2** (d) -1

23) a cot θ + b cosecθ = p and b cot θ + a cosecθ = q then p^2- q^2 is equal to

(a) a^2 - b^2 **(b) b^2 - a^2** (c) a^2 + b^2 (d) b - a

24) If the ratio of the height of a tower and the length of its shadow is $\sqrt{3} : 1$, then the angle of elevation of the sun has measure

(a) 45° (b) 30° (c) 90° **(d) 60°**

25) The electric pole subtends an angle of 30° at a point on the same level as its foot. At a second point 'b' metres above the first, the depression of the foot of the pole is 60°. The height of the pole (in metres) is equal to

(a) $\sqrt{3}$ b **(b)** $\frac{b}{3}$ (c) $\frac{b}{2}$ (d) $\frac{b}{\sqrt{3}}$

26) A tower is 60 m height. Its shadow is x metres shorter when the sun's altitude is 45° than when it has been 30°, then x is equal to

(a) 41.92 m **(b) 43.92 m** (c) 43 m (d) 45.6 m

27) The angle of depression of the top and bottom of 20 m tall building from the top of a multistoried building are 30° and 60° respectively. The height of the multistoried building and the distance between two buildings (in metres) is

(a) 20, $10\sqrt{3}$ (b) 30, $5\sqrt{3}$ (c) 20, 10 **(d) 30, $10\sqrt{3}$**

28) Two persons are standing 'x' metres apart from each other and the height of the first person is double that of the other. If from the middle point of the line joining their feet an observer finds the angular elevations of their tops to be complementary, then the height of the shorter person (in metres) is

(a) $\sqrt{2}$ x **(b)** $\frac{x}{2\sqrt{2}}$ (c) $\frac{x}{\sqrt{2}}$ (d) 2x

29) The angle of elevation of a cloud from a point h metres above a lake is β. The angle of depression of its reflection in the lake is 45°. The height of location of the cloud from the lake is

(a) $\frac{h(1+tan\beta)}{1-tan\beta}$ (b) $\frac{h(1-tan\beta)}{1+tan\beta}$ (c) h tan(45°-β) (d) none of these

30) If (sin α + cosec α)^2 + (cos α + sec α)^2 = k + tan$^2\alpha$ + cot$^2\alpha$, then the value of k is equal to

(a) 9 **(b) 7** (c) 5 (d) 3

31) Find the ratio in which the line segment joining the points (-3, 10) and (6, -8) is internally divided by (-1, 6) _____

(a) 7:2 (b) 3:4 **(c) 2:7** (d) 5:3

32) If the points (0, 0), (a, 0) and (0, b) are colllinear, then _____

(a) a = b (b) a + b **(c) ab = 0** (d) a ≠ b

33) If the mid-point of the line segment joining $A\left(\frac{x}{2}, \frac{y+1}{2}\right)$ and B(x + 1, y-3) is C(5, -2) then find the values of x, y _____

(a) (6, -1) (b) (-6, 1) (c) (-2, 1) (d) (3, 5)

34) The area of triangle formed by the points (a, b+c), (b, c+a) and (c, a+b) is _____

(a) a+b+c (b) abc (c) $(a+b+c)^2$ **(d) 0**

35) The four vertices of a quardrilateral are (1, 2), (5, -6), (7, -4) and (k, -2) taken in order. If the area of quadrilateral is zero then find the value of k.

(a) 4 (b) -2 (c) 6 (d) 3

36) Find the equation of the line passing the point which is parrallel to the y axis (5, 3) is _____

(a) y = 5 (b) y = 3 **(c) x = 5** (d) x = 3

37) Find the slope of the line 2y = x + 8 _____

(a) $\frac{1}{2}$ (b) 1 (c) 8 (d) 2

38) Find the value of P, given that the line $\frac{y}{2} = x - p$ passes through the point (-4, 4) is _____

(a) -4 **(b) -6** (c) 0 (d) 8

39) Find the slope and the y-intercept of the line $3y - \sqrt{3x} + 1 = 0$ is _____

(a) $\frac{1}{\sqrt{3}}, \frac{-1}{3}$ (b) $-\frac{1}{\sqrt{3}}, \frac{-1}{3}$ (c) $\sqrt{3}, 1$ (d) $-\sqrt{3}, 3$

40) Find the value of 'a' if the lines 7y = ax + 4 and 2y = 3 - x are parallel

(a) $\frac{7}{2}$ (b) $-\frac{2}{7}$ (c) $\frac{2}{7}$ **(d)** $-\frac{7}{2}$

41) A line passing through the point (2, 2) and the axes enclose an aream ∝. The intercept on the axes made by the line are given by the roots of _____

(a) x^2-2-∝x+∝ = 0 (b) x^2+2∝x+∝ = 0 **(c) x^2-∝x+2∝ = 0** (d) none of these

42) Find the equation of the line passing through the point (0, 4) and is parallel to 3x+5y+15 = 0 the line is _____

(a) 3x+5y+15 = 0 **(b) 3x+5y-20 = 0** (c) 2x+7y-20 = 0 (d) 4x+3y-15 = 0

43) In a right angle triangle, right angled at B, if the side BC is parallel to x axis, then the slope of AB is _____

(a) $\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$ (c) 1 (d) not defined

44) The y-intercept of the line 3x - 4y + 8 = 0 is _____

(a) $-\frac{8}{3}$ (b) $\frac{8}{3}$ **(c) 2** (d) $\frac{1}{2}$

45) The lines y = 5x - 3, y = 2x + 9 intersect at A.The coordinates of A are _____

(a) (2, 7) (b) (2, 3) **(c) (4, 17)** (d) (-4, 23)

46) The angle of elevation of a cloud from a point h metres above a lake is b. The angle of depression of its reflection in the lake is 45°. The height of location of the cloud from the lake is _____

(a) $\frac{h(1+tan\beta)}{1-tan\beta}$ (b) $\frac{h(1-tan\beta)}{1+tan\beta}$ (c) h tan(45°- β) (d) None of these

47) The area of the triangle whose vertices are (2, - 3), (3, 2) and (- 2, 5) is _____

(a) 11 (b) 12 **(c) 14** (d) 13

48) AD is the median of triangle ABC with vertices A (- 3, 2), B (5, - 2) and C (1, 3) The area of triangle ABD is _____

(a) 5 **(b) 6** (c) 7 (d) 8

49) If the points (2, 1), (3, -2) and (a, b) are collinear then _____

(a) a + b = 7 **(b) 3a + b = 7** (c) a - b = 7 (d) 3a - b = 7

50) If (a, b), (c, d) and (a - c, b - d) are collinear, then _____

(a) $\frac{a}{b} = \frac{c}{d}$ (b) $\frac{a}{d} = \frac{b}{c}$ (c) $\frac{a}{c} = \frac{d}{b}$ (d) $\frac{a}{b} = \frac{b}{c}$

51) If the area of the triangle formed by the points (- 2, 3), (4, - 5) and (- 3, Y) is 10 square units, then Y = _____

(a) 1 (b) -1 **(c)** $\frac{23}{3}$ (d) $\frac{-22}{3}$

52) The area of quadrilateral formed by the points (0, 0), (1, 0), (1, 4) and (0, 2) is _____

(a) 4 (b) 8 **(c) 12** (d) 16

53) The area of the rhombus formed by the points (3, 0), (0, 4), (- 3,0) and (0, - 4) is _____

(a) 24 (b) 30 (c) 32 (d) 36

54) The point (x, y) lies on the line joining (3, 4) and (-5, -6) if _____

(a) 4x - 5y = 1 (b) 5x - 4y = 1 **(c) 5x - 4y + 1 = 0** (d) 4x + 5y = 1

55) If the points A(6, 1), B(8 , 2), C(9, 4) and D(p, 3) are the vertices of a parallelogram,taken order then the value of p is _____

(a) -7 **(b) 7** (c) 6 (d) -6

56) What can be said regarding a line if its slope is negative?

(a) acute **(b) obfuse** (c) zero (d) None of these

57) What is the slope of a line whose inclination is 45^o?

(a) 1 (b) 2 (c) 0 (d) $\frac{1}{2}$

58) Find the inclination whose slope is $\frac{1}{\sqrt{3}}$

(a) 30^o (b) 60^o (c) 90^o (d) 45^o

59) Slope of the line joining the points (4, - 6) and (-2, -5) is _____

(a) $\frac{1}{6}$ **(b)** $\frac{-1}{6}$ (c) 6 (d) -6

60) The points A (1, - 2), B(3, 4) and C (4, 7)

(a) form a right triangle (b) form an isosceles triangle (c) form an equilateral triangle **(d) collinear**

61) The points A(4, 4), B(3, 5) and C (- 1, - 1) form _____

(a) Right triangle (b) isosceles triangle (c) equilateral triangle (d) None of these

62) The value of 'x' if the slope of the line joining (2, 5) and (x, 3) is _____

(a) 4 (b) 3 (c) 2 **(d) 1**

63) slope of the median through B if the vertices of ΔABC are A (2, 4), B (- 3, 1) and C (4, -7) is _____

(a) $\frac{12}{5}$ (b) $\frac{-12}{5}$ (c) $\frac{5}{12}$ **(d)** $\frac{-5}{12}$

64) The slopes of two line segments are equal.
Which of the following is correct?

(a) The line segments are parallel (b) The end points of the line segments are collinear
(c) The line segments are perpendicular (d) The end points of line segments are non-collinear

65) What does a linear equation with a slope of zero look like on a plane?

(a) Vertical line **(b) Horizontal line** (c) line passing through the origin (d) y axis

66) The equation of straight line which passes through the point (2, - 3) and parallel to x-axis is _____

(a) x = -2 (b) x = 2 **(c) y = -3** (d) y = 3

67) The equation of straight line parallel to y-axis and at a distance 3 units to the right is _____

(a) x = 1 (b) x = 2 (c) x = -3 **(d) x = 3**

68) The equation of straight line having slope 3 and making intercept 4 on the y-axis is _____

(a) 3x - y - 4 = 0 **(b) 3x - y + 4 = 0** (c) 3x + y - 4 = 0 (d) 3x + y + 4 = 0

69) The equation of straight line which passes through (- 4, 3) and having slope $\frac{1}{2}$ is _____

(a) x - 2y + 10 = 0 (b) x - 2y - 10 = 0 (c) x + 2y + 10 = 0 (d) x + 2y - 10 = 0

70) Equation of straight line passes through the points (0, - a) and (b, 0) is _____

(a) bx - ay = ab **(b) ax - by = ab** (c) x - y = ab (d) ax + by = 1

71) Slope of the line $\frac{x}{a} + \frac{y}{b} = 1$ is _____

(a) $\frac{b}{a}$ (b) $\frac{a}{b}$ (c) $\frac{-b}{a}$ (d) $\frac{-a}{b}$

72) Area of the triangle formed by the Co-ordinate axes and the line ax + by = 2ab is _____

(a) ab **(b) 2ab** (c) $\frac{ab}{2}$ (d) 4ab

73) If the line y = mx meets the lines x + 2y -1 = 0 and 2x - y + 3 = 0 at the same point, then m is _____

(a) 1 **(b) -1** (c) 2 (d) -2

74) Equation of the line perpendicular to x = 2 and passing through the point (2, - 8) is _____

(a) y = 8 **(b) y = -8** (c) x = 8 (d) x = -2

75) Equation of straight line which cuts off intercepts 2 and 3 from the co-ordinate axes is _____

(a) 2x - 3y - 6 = 0 (b) 2x + 3y - 6 = 0 (c) 3x - 2y - 6 = 0 (d) 3x + 2y - 6 = 0

76) General equation of a straight line is _____

(a) $\frac{-a}{b} + by + \frac{c}{b} = 0$ (b) $ax^2 + by^2 + c = 0$ (c) y = mx + c **(d) ax + by + c = 0**

77) Equation of line parallel to ax + by + c = 0 is _____

(a) $x + y + k = 0$ **(b)** $ax + by + k = 0$ (c) $x + y = -c$ (d) $bx + ay = c$

78) ax + by + c = 0 represents a line parallel to x-axis if _____

(a) a = 0, b = 0 **(b) a = 0, b** $\neq$ **0** (c) a $\neq$ 0, b = 0 (d) c = 0

79) The condition for the lines $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ to be perpendicular is _____

(a) $a_1a_2 + b_1b_2 = 0$ (b) $a_1b_1 + a_2b_2 = 0$ (c) $a_1a_2 - b_1b_2 = 0$ (d) $a_1b_1 - a_2b_2 = 0$

80) The lines 3x + 4y + 7 = 1 and 4x - 3y + 5 = 0 are _____

(a) Parallel **(b) Perpendicular** (c) Neither parallel nor perpendicular (d) Parallel and Perpendicular

81) Equation of line perpendicular to 2x + 5y = 7 and passing through the point (- 1, 4) is _____

(a) x - y +13 = 0 (b) x + y +13 = 0 (c) 2x + 5y +13 = 0 **(d) 5x - 2y +13 = 0**

82) Find the value of k if the staight lines (2 + 6k)x + (3 - k)y + (4 +12k) = 0 and 7x + 5y - 4 = 0 are perpendicular _____

(a) $\frac{29}{37}$ **(b)** $-\frac{29}{37}$ (c) $\frac{37}{29}$ (d) $-\frac{37}{29}$

83) The value of k if the lines 4x + ky - 8 and 4x + 3y = 5 are parallel is _____

(a) 3 (b) 5 (c) 4 (d) 2

84) Find the ratio in which the line segment joining the points (-3, 10) and (6, -8) is internally divided by (-1 , 6) is _____

(a) 7 : 2 (b) 3 : 4 **(c) 2 : 7** (d) 5 : 3

85) If the points (0, 0), (a, 0), and (0, b) are collinear, then _____

(a) a = b (b) a + b = 0 **(c) ab = 0** (d) a $\neq$ b

86) If the mid point of the line segment joining the points $A\left(\frac{x}{2}, \frac{y+1}{2}\right)$ and B(x + 1 ,y - 3) is C(5, -2), then find the values of x, y

(a) (6, -1) (b) (-6, 1) (c) (-2, 1) (d) (3, 5)

87) The area of triangle formed by the points (a, b + c),(b, c + a) and (c, a + b) is _____

(a) a + b + c (b) abc (c) $(a + b + c)^2$ **(d) 0**

88) The four vertices of a quadrilateral are (1, 2), (-5 , 6), (7 , -4), and (k, -2) taken in order. If the area of quadrilateral is zero then find the value of k

(a) -4 (b) -2 (c) 6 **(d) 3**

89) Find the equation of the straight line passes through the point (5, 3) which is parallel to the y-axis is _____

(a) y = 5 (b) y = 3 **(c) x = 5** (d) x = 3

90) Find the value of p, given that the line $\frac{y}{2} = x - p$ passes through the point (-4, 4) is _____

(a) -4 **(b) -6** (c) 0 (d) 8

91) In a right angled triangle ABC, right angled at B, if the side BC is parallel to x-axis, then the slope of AB is _____

(a) $\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$ (c) 1 **(d) not defined**

92) If the slopes of both the pairs of opposite sides are equal then the quadrilateral is a _____

(a) Parallelogram (b) Rhombus (c) trapezoid (d) None of the above

93) If cos A = $\frac{4}{5}$, then the value of tan A is _____

(a) $\frac{3}{5}$ (b) $\frac{3}{4}$ (c) $\frac{4}{3}$ (d) $\frac{5}{3}$

94) If sin A = $\frac{1}{2}$, then the value of cot A is _____

(a) $\sqrt{3}$ (b) $\frac{1}{\sqrt{3}}$ (c) $\frac{\sqrt{3}}{2}$ (d) 1

95) The value of the expression [cosec (75^o + θ) - sec (15^o - θ) - tan (55^o + θ) + cot(35^o - θ] is _____

(a) -1 (b) 0 (c) 1 (d) $\frac{3}{2}$

96) Given that sinθ = $\frac{a}{b}$, then cosθ is equal to _____

(a) $\frac{b}{\sqrt{b^2-a^2}}$ (b) $\frac{b}{a}$ (c) $\frac{\sqrt{b^2-a^2}}{b}$ (d) $\frac{b}{\sqrt{b^2-a^2}}$

97) If cos (∝ - β) =, then sin (∝ - β) can be reduced to _____

(a) cos β (b) cos 2β (c) sin ∝ (d) sin 2∝

98) The value of ($\tan 1^o \tan 2^o \tan 3^o$..... $\tan 89^o$) is _____

(a) 0 (b) 1 (c) 2 (d) $\frac{1}{2}$

99) If cos9∝ = sin∝ and 9∝ < 90^o, then the value of tan t∝ is

(a) $\frac{1}{\sqrt{3}}$ (b) $\sqrt{3}$ (c) 1 (d) 0

100) If ΔABC is right angled at C, then the value of cos (A + B) is _____

(a) 0 (b) 1 (c) $\frac{1}{2}$ (d) $\frac{\sqrt{3}}{2}$

101) If sin A + $\sin^2$A = 1, then the value of the expression ($\cos^2$A + $\cos^4$A) is _____

(a) 1 (b) $\frac{1}{2}$ (c) 2 (d) 3

102) Given that sin ∝ = $\frac{1}{2}$ and cos β = $\frac{1}{2}$, then the value of (∝ + β) is _____

(a) 0^o (b) 30^o (c) 60^o (d) 90^o

103) The value of the expression $\left[\frac{sin^2 22^o + sin^2 68^o}{cos^2 22^0 + cos^2 68^0} + sin^2 63^{o+} cos 63^0 sin 27^0\right]$ is _____

(a) 3 (b) 2 (c) 1 (d) 0

104) If 4 tan θ = 3, then $\left(\frac{4sin\theta - cos\theta}{4sin\theta + cos\theta}\right)$ is equal to _____

(a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{3}{4}$

105) If sin θ - cos θ = 0, then the value of ($\sin^4$ θ + $\cos^4$ θ) is _____

(a) 1 (b) $\frac{3}{4}$ (c) $\frac{1}{2}$ (d) $\frac{1}{4}$

106) Sin(45^o+ θ) - cos(45^o - θ) is equal to _____

(a) 2cos θ (b) 0 (c) 2sin θ (d) 1

107) A pole 6 m high a shadow $2\sqrt{3}$ m long on the ground, then the sun's elevation is _____

(a) 60^o (b) 45^o (c) 30^o (d) 90^o

108) The maximum value of sin θ is _____

(a) $\frac{1}{2}$ (b) $\frac{\sqrt{3}}{2}$ (c) 1 (d) $\frac{1}{\sqrt{2}}$

109) If A is an assets angle of Δ ABC, right angle at 3, then the value of sin A T cos A is _____

(a) =1 (b) > 1 (c) < 1 (d) =2

110) If cotθ = b/a then value of $\frac{cos\theta + sin\theta}{cos\theta - sin\theta}$ a

(a) $\frac{b-c}{b+a}$ (b) b-a (c) b+a (d) $-\frac{b+c}{b-a}$

111) If tan θ = cot θ the value of sec θ is _____

(a) 2 (b) 1 (c) $\frac{1}{\sqrt{3}}$ (d) $\sqrt{2}$

112) If a sin (90 - θ) of (90° - θ) = cos(90° - θ)tan equal to _____

(a) 0 (b) 1 (c) -1 (d) 2

113) If sec θ + tan θ = n, and sec θ - tan θ = 0, then the value of mn is _____

(a) 2 (b) 1 (c) ±1 (d) ±2

114) The value of $\sin^2\theta + \frac{1}{1+tan^2\theta}$ of _____

(a) $\sin^2\theta$ (b) $\cos^2\theta$ (c) secθ (d) 1

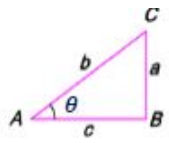
115) $(\text{cosec}^2\theta - \cot^2\theta)(1 - \cos^2\theta)$ is equal to _____

(a) cosec θ (b) $\cos^2\theta$ (c) $\sec^2\theta$ (d) $\sin^2\theta$

116) $9\sec^2 A - 9\tan^2 A$ = _____

(a) 1 (b) 9 (c) 8 (d) 0

117) From the figure, the value of cosec θ + cot θ is _____



(a) $\frac{a+b}{c}$ (b) $\frac{c}{a+b}$ **(c)** $\frac{b+c}{a}$ (d) $\frac{b}{a+c}$

118) (sec A + tan A)(1 - sin A) is equal to _____

(a) sec A (b) sin A (c) cosec A **(d) cos A**

119) If x = r sin θ cos φ y = r sin θ. Then $x^2 + y^2 + z^2$_____

(a) r **(b) r^2** (c) $\frac{r^2}{2}$ (d) $2r^2$

120) If $\cos\theta + \cos^2\theta = 3$ then $\tan^2\theta + \cot^2\theta$ is equal to _____

(a) 4 **(b) 7** (c) 6 (d) 9

121) If tan θ + cot θ = 3 then $\tan^2\theta + \cot^2\theta$ is equal to _____

(a) 4 **(b) 7** (c) 6 (d) 9

122) If m cos θ + n sin θ = a and m sin θ - n cos θ = b then $a^2 + b^2$ is equal to _____

(a) m^2-n^2 **(b) m^2+n^2** (c) m^2n^2 (d) n^2-m^2

123) $\frac{tan\theta}{sec\theta} + \frac{tan\theta}{sec\theta+1}$ is equal to

(a) 2tanθ (b) 2secθ **(c) 2cosecθ** (d) 2 tanθsecθ

124) The value of $\frac{3}{cot^2\theta} - \frac{3}{cos^2\theta}$ is equal to _____

(a) $\frac{1}{3}$ (b) 3 (c) 0 (d) -3

125) If sin(α + β) = 1 then cos(α - β) can be reduced to _____

(a) sin α (b) cos β **(c) sin 2β** (d) cos 2β

126) If x = a sec θ and = b tan θ, then $b^2x^2 - a^2y^2$ is equal to _____

(a) ab (b) a^2-b^2 (c) a^2+b^2 **(d) a^2b^2**

127) The angle of elevation of the top of tree from a point at a distance of 250 m from its base is 60°. The height of tree is _____

(a) 250 m **(b)** $250\sqrt{3}$ (c) $\frac{250}{3}m$ (d) $200\sqrt{3}$

128) The angle of depression of a boat from a $50\sqrt{3}$ m high bridge is 30°. The horizontal distance of the boat from the bridge is _____

(a) 150 m (b) $150\sqrt{3}$ (c) 60m (d) $60\sqrt{3}$

129) A ladder of length 14m just reaches the top of a wall. If the ladder makes an angle of 60° with the horizontal, then the height of the wall is _____

(a) $14\sqrt{3}$ (b) $28\sqrt{3}$ **(c)** $7\sqrt{3}$ (d) $35\sqrt{3}$

130) The top of two poles of height 18.5m and 7m are connected by a wire. If the wire makes an angle of measures 360° with horizontal, then the length of the wire is _____

(a) 23m (b) 18m (c) 28m (d) 25.5m

131) The blanks of river are parallel. A swimmer starts from a point on one of the banks and swims in a straight line to the bank at 45° and reaches the opposite bank at a point 20 m, from the point opposite to the straight point. The breadth of the river is equal to _____

(a) 12.12m **(b) 14.14m** (c) 1016.16m (d) 18.18m

132) $\cos^4 x - \sin^4 x$ = _____

(a) $2\sin^2 x - 1$ (b) $2\cos^2 x - 1$ (c) $1 + 2\sin^2 x$ (d) $1 + 2\cos^2 x$

133) If $\tan\theta = \frac{a}{b}$, then $\frac{a\sin\theta + b\cos\theta}{a\sin\theta - b\cos\theta}$ is _____

(a) $\frac{a^2+b^2}{a^2-b^2}$ (b) $\frac{a^2-b^2}{a^2+b^2}$ (c) $\frac{a+b}{a-b}$ (d) $\frac{a-b}{a+b}$

134) If A and B are complementary angles then _____

(a) sin A = sin B (b) cos A = cos B (c) tan A = tan B **(d) sec A = cosec B**

135) If $x\sin(90^\circ - \theta)\cot(90^\circ - \theta) = \cos(90^\circ - \theta)$ then x =

(a) 0 **(b) 1** (c) -1 (d) 2

136) If $x\tan 45^\circ \cos 60^\circ = \sin 60^\circ \cot 60^\circ$, then x is _____

(a) 1 (b) $\sqrt{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{\sqrt{2}}$

137) $\frac{1-\tan^2 45^\circ}{1+\tan^2 45^\circ}$ =

(a) tan 90° (b) 1 (c) sin 45° **(d) sin 0°**

138) If $\sec\theta + \tan\theta = x$, then $\sec\theta$ =

(a) $\frac{x^2+1}{x}$ **(b)** $\frac{x^2+1}{2x}$ (c) $\frac{x^2-1}{2x}$ (d) $\frac{x^2-1}{x}$

139) $\sqrt{\frac{1+\sin\theta}{1-\sin\theta}}$ =

(a) $\sec\theta + \tan\theta$ (b) $\sec\theta - \tan\theta$ (c) $\sec^2\theta + \tan^2\theta$ (d) $\sec^2\theta - \tan^2\theta$

140) $\cos^4 A - \sin^4 A$ =

(a) $2\cos^2$ A + 1 **(b) $2\cos^2$ A - 1** (c) $2\sin^2$ A - 1 (d) $2\sin^2$ A + 1

141) $\frac{\sin\theta}{1+\cos\theta}$ =

(a) $\frac{1+\cos\theta}{\sin\theta}$ (b) $\frac{1-\cos\theta}{\cos\theta}$ **(c)** $\frac{1-\cos\theta}{\sin\theta}$ (d) $\frac{1-\sin\theta}{\cos\theta}$

142) If $\sin\theta + \sin^2\theta = 1$ then $\cos^2\theta + \cos^4\theta$ =

(a) -1 **(b) 1** (c) 0 (d) None of these

143) $\frac{\sin(90-\theta)\sin\theta}{\tan\theta} + \frac{\cos(90-\theta)\cos\theta}{\cot\theta}$.

(a) $\tan\theta$ **(b) 1** (c) -1 (d) $\sin\theta$

144) From a given point when height of an object increases the angle of elevation_____

(a) increases (b) decreases (c) neither increases nor decreases (d) equal

145) The ratio of the length of a rod and its shadow is $1 : \sqrt{3}$. The angle of elevation of the sum is _____

(a) 30° (b) 45° (c) 60° (d) 90°

146) If the angle of elevation of a tower from a distance of 100 m from its foot is 60°, then the height of the tower is _____

(a) $100\sqrt{3}m$ (b) $\frac{100}{\sqrt{3}}m$ (c) $50\sqrt{3}m$ (d) $\frac{200}{\sqrt{3}}m$

147) If the altitude of the sun is at 60°, then ttre height of the vertical tower that will cast a shadow of length 30 m is

(a) $30\sqrt{3}m$ (b) 15 m (c) $\frac{30}{\sqrt{3}}m$ (d) $15\sqrt{2}m$

148) The angles of elevation of a tower from two points distant a and b (a > b) from its foot and in the same sfiaight line from if are 30° and 60°,then the height of the tower is

(a) $\sqrt{a+b}$ **(b)** $\sqrt{ab}$ (c) $\sqrt{a-b}$ (d) $\sqrt{\frac{a}{b}}$

149) The angle of elevation and depression are usually measured by a device called

(a) Theodolite **(b) Kaleidoscope** (c) Periscope (d) Telescope

150) The angle of depression of a car, standing on the ground from the top of a 75 m tower is 30º. The distance of the car from the base of the tower in metres is

(a) $25\sqrt{3}$ (b) $50\sqrt{3}$ **(c)** $75\sqrt{3}$ (d) 150

151) A tower subtends an angle 30º at a point on the same level as its foot. At a second point h metres above ttre first the depression of the foot of the tower is 60º. The height of the tower is

(a) $\frac{h}{2}m$ (b) $\sqrt{3}$hm **(c)** $\frac{h}{3}m$ (d) $\frac{h}{\sqrt{3}}m$

152) The angles of depression of two ships from the top of a light house are 45º and 30º towards east. If the ships are 100 m apart, the heigt of the light house is

(a) $\frac{50}{\sqrt{3}+1}m$ (b) $\frac{50}{\sqrt{3}-1}m$ (c) $50(\sqrt{3}-1)m$ **(d)** $50(\sqrt{3}+1)m$

153) If the altitude of the light house is h metres and from it the angre of depression of Two ships on opposite sides of the light house are observed to be 30º and 45º, then the distance between the ships are

(a) $(\sqrt{3}+1)h$ metres (b) $(\sqrt{3}-1)h$ metres (c) $(\sqrt{3}h$ metres (d) $1+\left(1+\frac{1}{\sqrt{3}}\right)h$ metres

154) The angle of elevation of the top of tree from a point at a distance of 250 m from its base is 60º The height of the tree is

(a) 250 m **(b)** $250\sqrt{3}$ m (c) $\frac{250}{\sqrt{3}}$ m (d) $200\sqrt{3}$ m

155) The angle of depression of a boat from a $50\sqrt{3}$ m high bridge is 30º. The horizontal distance of the boat from the bridge is _____

(a) 150 m (b) $150\sqrt{3}$ m (c) 60 m (d) $60\sqrt{3}$ m

156) A ladder of length 14 m just reaches the top of a wall. If the ladder makes an angle of 60º with the horizontal, then the height of the wall is _____

(a) $14\sqrt{3}$ m (b) $28\sqrt{3}$ m **(c)** $7\sqrt{3}$ m (d) $35\sqrt{3}$ m

157) The top of two poles of height 18.5 m and 7 m are connected by a wire. If the wire makes an angle of measure 30º with horizontal, then the length of the wire is _____

(a) 23 m (b) 18 m (c) 28 m (d) 25.5 m

158) The banks of a river are parallel. A swimmer starts from a point on one of the banks and swims in a straight line inclined to the bank at 45º and reaches the opposite bank at a point 20m, from the point opposite to the starting point. The breadth of the river is equal to _____

(a) 12.12 m **(b) 14.14 m** (c) 16.16 m (d) 18.18 m

159) The father of trigonometry is _____

(a) Phythogoras (b) Gottfried Wilhelm (c) Omar Khayam (d) Hipparchus

160) $\frac{\text{Sec}\,\theta}{\text{Cot}\,\theta+\tan\theta}$ = _____.

(a) cot θ (b) tan θ **(c) Sin** θ (d) -Cot θ

161) A Chord is a subsection of _____.

(a) Radius (b) Secant (c) Chord **(d) tangent**