X – MATHS - BOOKBACK ONE MARKS
CHAPTER – 1 RELATIONS AND FUNCTIONS

I. **Choose the correct answer.**

1. If $n(A \times B) = 6$ and $A = \{1,3\}$ then $n(B)$ is _____ a) 1 b)2 c) 3 d)6

2. $A = \{a,b,p\}$, $B = \{2,3\}$, $C = \{p,q,r,s\}$ then $n[(A \cup C) \times B]$ is_____
   a)8 b)20 c)12 d)16

3. If A={1,2}, B={1,2,3,4}, C={5,6} and D={5,6,7,8} then state which of the following statement is true. a)$(A \times C) \subset (B \times D)$ b)$(B \times D) \subset (A \times C)$ c)$(A \times B) \subset (A \times D)$ d)$(D \times A) \subset (B \times A)$

4. If there are 1024 relations from a set A={1,2,3,4,5} to a set B, then the number of elements in B is ___a)3 b)2 c)4 d)8

5. The range of the relation $R = \{(x, x^2)|x$ is a prime number less than 13$\}$ is _____a)$\{2,3,5,7\}$ b)$\{2,3,5,7,11\}$ c)$\{4,9,25,49,121\}$ d)$\{1,4,9,25,49,121\}$

6. If the ordered pairs $(a + 2,4)$ and $(5, 2a + b)$ are equal then (a,b) is _____a)(2,-2) b)(5,1) c)(2,3) d)(3,-2)

7. Let $n(A) = m$ and $n(B) = n$ then the total number of non-empty relations that can be defined from A to B is_____a)m^n b) n^m c)$2^{mn} - 1$ d)2^{mn}

8. If $\{(a,8), (6,b))\}$ represents an identity function, then the value of a and b are respectively_____a) (8,6) b)(8,8) c)(6,8) d)(6,6)

9. Let A={1,2,3,4} and B={4,8,9,10}. A function $f: A \to B$ given by $f = \{(1,4), (2,8), (3,9), (4,10)\}$ is a _____a)Many-one function b)Identity function c)One-to-one function d)Into function

10. If $f(x) = 2x^2$ and $g(x) = \dfrac{1}{3x}$, then fog is ___
    a)$\dfrac{3}{2x^2}$ b)$\dfrac{2}{3x^2}$ c)$\dfrac{2}{9x^2}$ d)$\dfrac{1}{6x^2}$

11. If f:A→ B is a bijective function and if n(B)=7, then n(A) is equal to ___a)7 b)49 c)1 d)14

12. Let f and g be two functions given by
    $f = \{(0,1), (2,0), (3,-4), (4,2), (5,7)\}$ g = \{(0,2), (1,0),(2,4),(-4,2),(7,0)\}$
    then the range of f $\circ$g is ___a)$\{0,2,3,4,5\}$ b) $\{-4,1,0,2,7\}$ c) $\{1,2,3,4,5\}$ d)$\{0,1,2\}$

13. Let $f(x) = \sqrt{1 + x^2}$ then _____a)$f(xy) = f(x).f(y)$ b)$f(xy) \geq f(x).f(y)$ c)$f(xy) \leq f(x).f(y)$ d)none of these

14. If g = \{(1,1), (2,3), (3,5), (4,7)\}$ is a function given by g(x) = αx + β then the values of α and β are_____a)(-1,2) b) (2,-1) c)(-1,-2) d)(1,2)

15. f(x)=(x+1)³-(x-1)³ represents a function which is ___a)linear b)cubic c)reciprocal d)quadratic

CHAPTER – 2 NUMBERS AND SEQUENCES

1. Euclid's division lemma states that for positive integers a and b, there exist unique integers q and r such that a=bq+r, where r must satisfy.
   a)$1 < r < b$ b)$0 < r < b$ c)$0 \leq r < b$ d)$0 < r \leq b$

2. Using Euclid's division lemma, if the cube of any positive integer is divided by 9 then the possible remainders are____ a)0,1,8 b)1,4,8 c)0,1,3 d)1,3,5

3. If the HCF of 65 and 117 is expressible in the form of 65m-117, then the value of m is ____a)4 b)2 c)1 d)3

4. The sum of the exponents of the prime factors in the prime factorization of 1729 is___a) 1 b)2 c)3 d)4

5. The least number that is divisible by all the numbers from 1 to 10 (both inclusive) is____ 2025 b)5220 c)5025 d)2520

6. $7^{4k} \equiv$ _____(mod 100). a)1 b)2 c)3 d)4

7. Given $F_1 = 1$, $F_2 = 3$ and $F_n = F_{n-1} + F_{n-2}$ then F_5 is_____a) 3 b)5 c)8 d)11

8. The first term of an arithmetic progression is unity and the common difference is 4. Which of the following will be a term of this A.P. a)4551 b)10091 c)7881 d)13531

9. If 6 times of 6th term of an A.P. is equal to 7 times the 7th term, then the 13th term of the A.P is _____a)0 b)6 c)7 d)13

10. An A.P. consists of 31 terms. If its 16th term is m, then the sum of all the terms of this A.P. is _____a)16m b)62m c)31m d)$\frac{31}{2}m$

11. In an A.P., the first term is 1 and the common difference is 4. How many terms of the A.P. must be taken for their sum to be equal to 120? a)6 b)7 c)8 d)9

12. If $A = 2^{65}$ and $B = 2^{64} + 2^{63} + 2^{62} + \ldots + 20$, which of the following is true? a)B is 2^{64} more than A   b)A and B are equal
    c)B is larger than A by 1   d)A is larger than B by 1

13. The next term of the sequence $\frac{3}{16}, \frac{1}{8}, \frac{1}{12}, \frac{1}{18}, \ldots$ is ___
    a)$\frac{1}{24}$ b)$\frac{1}{27}$ c)$\frac{2}{3}$ d)$\frac{1}{81}$

14. If the sequence $t_1, t_2, t_3, \ldots$ are in A.P. Then the sequence $t_6, t_{12}, t_{18} \ldots$ Is _____a) a Geometric progression b)an Arithmetic progression c)neither an Arithmetic progression nor a Geometric progression d)a constant sequence

15. The value of $(1^3 + 2^3 + 3^3 + \ldots + 15^3) - (1 + 2 + 3 \ldots + 15)$ ___a)14400 b)14200 c)14280 d)14520

CHAPTER – 3 ALGEBRA

1. A system of three linear equations in three variables is inconsistent if their planes ___ a) intersect only at a point b)do not intersect c)intersect in a line   d)coincides with each other

2. The solution of the system $x + y - 3z = -6, -7y + 7z = 7, 3z = 9$ is _____ a)$x = 1, y = 2, z = 3$ b)$x = -1, y = 2, z = 3$ c)$x = -1, y = -2, z = 3$ d)$x = 1, y = -2, z = 3$

3. If (x-6) is the HCF of x^2-2x-24 and x^2-kx-6 then the value of k is___ a)3 b)5 c)6 d)8

4. $\frac{3y-3}{y} \div \frac{7y-7}{3y^2}$ is___ a) $\frac{9y}{7}$ b)$\frac{9y^3}{(21y-21)}$ c)$\frac{21y^2-42y+21}{3y^3}$ d)$\frac{7(y^2-2y+1)}{y^2}$

5. $y^2 + \frac{1}{y^2}$ is not equal to ___ a) $\frac{y^4+1}{y^2}$ b)$\left(y - \frac{1}{y}\right)^2 + 2$ c) $\left(y + \frac{1}{y}\right)^2$ d) $\left(y + \frac{1}{y}\right)^2 - 2$.

6. $\frac{x}{x^2-25} - \frac{8}{x^2+6x+5}$ gives ___a)$\frac{x^2-7x+40}{(x-5)(x+5)}$ b)$\frac{x^2+7x+40}{(x-5)(x+5)(x+1)}$ c)$\frac{x^2-7x+40}{(x-25)(x+1)}$ d) $\frac{x^2+10}{(x^2-25)(x+1)}$

7. The square root of $\frac{256x^8y^4z^{10}}{25x^6y^6z^6}$ is equal to ___a) $\frac{16}{5}\left|\frac{x^2z^4}{y^2}\right|$ b)$16\left|\frac{y^2}{x^2z^4}\right|$ c)$\frac{16}{5}\left|\frac{y}{xz^2}\right|$ d)$\frac{16}{5}\left|\frac{xz^2}{y}\right|$

8. Which of the following should be added to make x^4 + 64 a perfect square? a) $4x^2$ b)$16x^2$ c) $8x^2$ d) $-8x^2$

9. The solution of $(2x - 1)^2 = 9$ is equal to _____ a)-1   b)2   c)-1,2 d)None of these

10. The values of a and b if $4x^4 - 24x^3 + 76x^2 + ax + b$ is a perfect square are _____ a)100, 120 b)10,12 c)-120, 100 d)12,10

11. If the roots of the equation $q^2x^2 + p^2x + r^2 = 0$ are the squares of the roots of the equation $qx^2 + px + r = 0$, then q, p, r are in _____ a)A.P b)G.P c)Both A.P and G.P d)None of these

12. Graph of a linear polynomial is a _____ a) straight line b)circle c)parabola d)hyperbola

13. The number of points of intersection of the quadratic polynomial x^2+4x+4 with the x-axis is___ a)0 b)1 c)0 or 1 d)2

14. For the given matrix $A = \begin{bmatrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \\ 9 & 11 & 13 & 15 \end{bmatrix}$ the order of the matrix A^T is ___ a)2×3 b)3×2 c)3×4 d)4×3

15. If A is a 2 × 3 matrix and B is a 3 × 4 matrix, how many columns does AB have ___ a)3 b)4 c)2 d)5

16. If number of columns and rows are not equal in a matrix then it is said to be a _____ a)diagonal matrix b)rectangular matrix c)square matrix d)identity matrix

17. Transpose of a column matrix is _____ a)unit matrix b)diagonal matrix c)column matrix d)row matrix

18. Find the matrix X if $2X + \begin{pmatrix} 1 & 3 \\ 5 & 7 \end{pmatrix} = \begin{pmatrix} 5 & 7 \\ 9 & 5 \end{pmatrix}$ ___ a) $\begin{pmatrix} -2 & -2 \\ 2 & -1 \end{pmatrix}$

    b) $\begin{pmatrix} 2 & 2 \\ 2 & -1 \end{pmatrix}$ c) $\begin{pmatrix} 1 & 2 \\ 2 & 2 \end{pmatrix}$ d) $\begin{pmatrix} 2 & 1 \\ 2 & 2 \end{pmatrix}$

19. Which of the following can be calculated from the given matrices

    A= $\begin{bmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{bmatrix}$, B= $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$ (i) A² (ii)B² (iii)AB (iv)BA.

    a)(i) & (ii) only b)(ii)&(iii) only   c)(ii)&(iv) only   d)All of these

20. If $A = \begin{pmatrix} 1 & 2 & 3 \\ 3 & 2 & 1 \end{pmatrix}$, B= $\begin{pmatrix} 1 & 0 \\ 2 & -1 \\ 0 & 2 \end{pmatrix}$ and C= $\begin{pmatrix} 0 & 1 \\ -2 & 5 \end{pmatrix}$. Which of the

    following statements are correct? (i) $AB + C = \begin{pmatrix} 5 & 5 \\ 5 & 5 \end{pmatrix}$

    (ii) $BC = \begin{pmatrix} 0 & 1 \\ 2 & -3 \\ -4 & 10 \end{pmatrix}$ (iii) $BA + C = \begin{pmatrix} 2 & 5 \\ 3 & 0 \end{pmatrix}$

    (iv) $(AB)C = \begin{pmatrix} -8 & 20 \\ -8 & 13 \end{pmatrix}$ a)(i) and (ii) only   b) (ii) and (iii) only

   c)(iii) and (iv) only d)all of these

CHAPTER – 4 GEOMETRY

1. If in triangles ABC and EDF, $\frac{AB}{DE} = \frac{BC}{FD}$ then they will be similar, when ___

   a)$\angle B = \angle B$ b) $\angle A = \angle D$ c) $\angle B = \angle D$ d) c) $\angle A = \angle F$

2. In $\Delta LMN, \angle L = 60°, \angle M = 50°$. If $\Delta LMN \sim \Delta PQR$ then the value of $\angle R$ is ____ a)40° b)70° c)30° d)110°

3. If ΔABC is an isosceles triangle with $\angle C = 90° \text{ and } AC = 5cm$, then AB is ____ a)2.5cm b)5cm c)10cm d)$5\sqrt{2}cm$

4. In a given figure $ST||QR, PS = 2cm$ and $SQ = 3cm$. Then the ratio of the area of ΔPQR to the area of ΔPST is ____


4
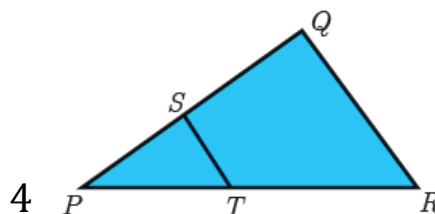
a)25:4 b)25:7 c)25:11 d)25:13

5. The perimeters of two similar triangles ABC and ΔPQR are 36cm and 24cm respectively. If $PQ = 10cm$, then the length of AB is ___ a)$6\frac{2}{3}$ cm b)$\frac{10\sqrt{6}}{3}$ cm c)$66\frac{2}{3}$ cm d)15cm

6. If in $\Delta ABC, DE||BC. AB = 3.6cm, AC = 2.4cm$ and $AD = 2.1cm$ then the length of AE is ____ a)1.4cm b)1.8cm c)1.2cm d)1.05cm

7. In a $\Delta ABC, AD$ is the bisector of $\angle BAC$. If AB=8cm, BC=6cm and DC=3cm. The length of the side AC is ____a)6cm b)4cm c)3cm d)8cm

8. In the adjacent figure $\angle BAC = 90°$ and $AD \perp BC$ then ____
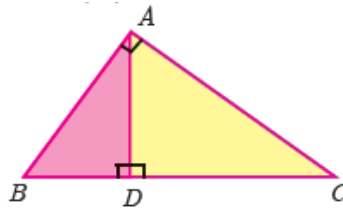
   a)$BD.CD = BC^2$ b)$AB.AC = BC^2$ c)$BD.CD = AD^2$ d)$AB.AC = AD^2$

9. Two poles of heights 6m and 11m stand vertically on a plane ground. If the distance between their feet is 12m, what is the distance between their tops? a)13m b)14m c)15m d)12.8m

10. In the given figure, $PR = 26cm, QR = 24cm, \angle PAQ = 90°, PA = 6cm$ and $QA = 8cm$. Find $\angle PQR$____
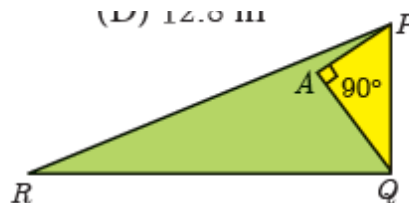
   a)80° b)85° c)75° d)90°

11. A tangent is perpendicular to the radius at the ___a)centre b)point of contact c)Infinity d)chord

12. How many tangents can be drawn to the circle from an exterior point? a)one b)two c)infinity d)zero

13. The two tangents from an external points P to a circle with centre at O are PA and PB. If $\angle APB = 70°$ then the value of $\angle AOB$ is ____a)100° b)110° c)120° d)130°

14. In figure CP and CQ are tangents to a circle with centre at O. ARB is another tangent touching the circle at R. If CP=11cm and BC=7cm, then the length of BR is _____
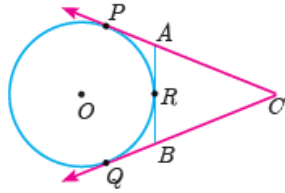
a)6cm b)5cm c)8cm d)4cm

15. In figure if PR is tangent to the circle at P and O is the centre of the circle, then $\angle POQ$ is ___
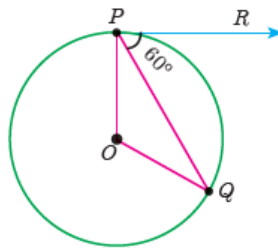
a)120° b)100° c)110° d)90°

CHAPTER – 5 CO-ORDINATE GEOMETRY

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 s.q.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 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 abscissa 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 trapezium, 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 length 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)$x + 3y - 3 = 0;\ x - y - 7 = 0$

CHAPTER – 6 TRIGONOMETRY

1. The value of $\sin^2\theta + \frac{1}{1+tan^2\theta}$ is equal to ___ a) $tan^2\theta$ b) $cot^2\theta$ c) 0   d)1

2. $tan\theta cosec^2\theta - tan\theta$ is equal to ___ a)cot θ   b)cot²θ   c)sinθ   d)secθ

3. If $(sin\alpha + cosec\alpha)^2 + (cos\alpha + sec\alpha)^2 = k + \tan^2\alpha + \cot^2\alpha$, then the value of k is equal to _____a)9   b)7   c)5   d)3

4. If sinθ+cosθ=a and secθ+cosecθ=b, then the value of b(a²-1) is equal to ___ a)3a   b)0   c)2ab   d)2a

5. If $5x = sec\theta$ and $\frac{5}{x} = tan\theta$, then $x^2 - \frac{1}{x^2}$ is equal to ___

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

6. If $sin\theta = cos\theta$, then $2 tan^2\theta + sin^2\theta - 1$ is equal to ___

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

7. If x=atanθ and y=bsecθ then ___ a)$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ b)$\frac{x^2}{a^2} - \frac{y^2}{b^2} = -1$

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

8. (1+tanθ+secθ) (1+cotθ-cosecθ) is equal to ___ a)0 b)1 c)2 d)-1

9. $acot\theta + bcosec\theta = p$ and $bcot\theta + acosec\theta = q$ then $p^2 - q^2$ is equal to ___ a)$a^2 - b^2$ b)$b^2 - a^2$ c)$a^2 + b^2$ d)$b - a$

10. 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)60° c)30° d)90°

11. 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)$\frac{b}{\sqrt{3}}$

12. A tower is 60m heigh. 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)41.92m b)43.92m c)43m d)45.6m

13. The angle of depression of the top and bottom of 20m 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$\sqrt{3}$

14. 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

15. 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)$htan(45° - \beta)$ d)None of these

CHAPTER – 7 MENSURATION

1. The curved surface area of a right circular cone of height 15cm and base diameter 16 cm is __a)$60\pi cm^2$ b)$68\pi cm^2$ c)$120\pi cm^2$ d)$136\pi cm^2$

2. If two solid hemispheres of same base radius r units are joined together along their bases, then curved surface are of this new solid is __a)$4\pi r^2 sq.units$ b)$6\pi r^2 sq.units$ c)$3\pi r^2 sq.units$ d)$8\pi r^2 sq.units$

3. The height of a right circular cone whose radius is 5cm and slant height is 13cm will be __a)12cm b)10cm c)13 cm d) 5cm

4. If the radius of the base of a right circular cylinder is halved keeping the same height, then the ratio of the volume of the cylinder thus obtained to the volume of original cylinder is __a)1:2 b)1:4 c)1:6 d)1:8

5. The total surface area of a cylinder whose radius is $\frac{1}{3}$ of its height is ____a)$\frac{9\pi h^2}{8}sq.units$ b)$24\pi h^2 sq.units$ c)$\frac{8\pi h^2}{9}sq.units$ d)$\frac{56\pi h^2}{9}sq.units$

6. In a hollow cylinder, the sum of the external and internal radii is 14cm and the width is 4cm. If its height is 20cm, the volume of the material in it is __a)$5600\pi cm^2$ b)$11200\pi cm^3$ c)$56\pi cm^3$ d)$3600\pi cm^3$

7. If the radius of the base of a cone is tripled and the height is doubled then the volume is ___a)made 6 times b)made 18 times c)made 12 times d)unchanged

8. The total surface area of a hemi-sphere is how much times the square of its radius. a)π b) 4π c)3π d)2π

9. A solid sphere of radius $x\ cm$ is melted and cast into a shape of a solid cone of same radius. The height of the cone is _____a)$3xcm$ b)xcm c)$4xcm$ d)$2xcm$

10. A frustum of a right circular cone is of height 16cm with radii of its ends as 8cm and 20cm. Then, the volume of the frustum is ___a)$3328\pi cm^3$ b)$3228\pi cm^3$ c)$3240\pi cm^3$ d)$3340\pi cm^3$

11. A shuttle cock used for playing badminton has the shape of the combination of _____ a)a cylinder and a sphere b)a hemisphere and a cone c)a sphere and a cone d)frustum of a cone and a hemisphere

12. A spherical ball of radius r_1 units is melted to make 8 new identical balls each of radius r_2 units. Then $r_1 : r_2$ is ___a)2:1 b)1:2 c)4:1 d)1:4

13. The volume (in cm³) of the greatest sphere that can be cut off from a cylindrical long of wood of base radius 1cm and height 5cm is ___a)$\frac{4}{3}\pi$ b)$\frac{10}{3}\pi$ c)5π d)$\frac{20}{3}\pi$

14. The height and radius of the cone of which the frustum is a part of h_1 units and r_1 units respectively. Height of the frustum is h_2 units and radius of the smaller base is r_2 units. If $h_2 : h_1 = 1:2$ then $r_2 : r_1$ is ___a)1:3 b)1:2 c)2:1 d)3:1

15. The ratio of the volumes of a cylinder, a cone and a sphere, if each has the same diameter and same height is ___a)1:2:3 b)2:1:3 c)1:3:2 d)3:1:2

CHAPTER – 8 STATISTICS AND PROBABILITY

1. Which of the following is not a measure of dispersion? a)Range b)Standard deviation c)Arithmetic mean d)Variance

2. The range of the data 8,8,8,8,8…. 8 is ___a)0 b)1 c)8 d)3

3. The sum of all deviations of the data from its mean is ___a)always positive b)always negative c)zero d)non-zero integer

4. The mean of 100 observations is 40 and their standard deviation is 3. The sum of squares of all deviations is ___a)40000 b)160900 c)160000 d)30000

5. Variance of first 20 natural numbers is ___a)32.25 b)44.25 c)33.25 d)30

6. The standard deviation of a data is 3. If each value is multiplied by 5 then the new variance is ___a)3 b)15 c)5 d)225

7. If the standard deviation of x,y,z is p then the standard deviation of 3x+5, 3y+5, 3z+5 is ____a)3p+5 b)3p c)p+5 d)9p+15

8. If the mean and coefficient of variation of a data are 4 and 87.5% then the standard deviation is ____a)3.5 b)3 c)4.5 d)2.5

9. Which of the following is incorrect? a)$P(A)>1$ b)$0 \leq P(A) \leq 1$ c)$P(\phi)=0$ d)$P(A)+P(\bar{A})=1$

10. The probability a red marble selected at random from a jar containing p red, q blue and r green marbles is ____a) $\frac{q}{p+q+r}$ b) $\frac{p}{p+q+r}$ c) $\frac{p+q}{p+q+r}$ d) $\frac{p+r}{p+q+r}$

11. A page is selected at random from a book. The probability that the digit at units place of the page number chosen is less than 7 is ____a) $\frac{3}{10}$ b) $\frac{7}{10}$ c) $\frac{3}{9}$ d) $\frac{7}{9}$

12. The probability of getting a job for a person is $\frac{x}{3}$. If the probability of not getting the job is $\frac{2}{3}$ then the value of x is ____a)2 b)1 c)3 d)1.5

13. Kamalam went to play a lucky draw contest, 135 tickets of the lucky draw were sold. If the probability of Kamalam winning is $\frac{1}{9}$, then the number of tickets bought by Kamalam is ____a)5 b)10 c)15 d)20

14. If a letter is chosen at random from the English alpahebts {a,b,...z}, then the probability that the letter chosen precedes x ____a) $\frac{12}{13}$ b) $\frac{1}{13}$ c) $\frac{23}{26}$ d) $\frac{3}{26}$

15. A purse contains 10 notes of Rs.2000, 15 notes of Rs.500, and 25 notes of Rs.200. One note is drawn at random. What is the probability that the note is either a Rs.500 note or Rs.200 note? a) $\frac{1}{5}$ b) $\frac{3}{10}$ c) $\frac{2}{3}$ d) $\frac{4}{5}$