MULTIPLE CHOICE TYPE QUESTIONS

For CBSE 2025 Exams - Mathematics - Class 10

Chapter 01 - Real Numbers

Q01. The smallest prime number is

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

Q02. The sum of first five prime numbers is

(a) 26 (b) 15 (c) 39 (d) 28

Q03. Total prime numbers between 1 and 100 are

(a) 31 (b) 25 (c) 22 (d) 20

Q04. The unit's digit obtained on simplifying $207 \times 781 \times 39 \times 94$ is

(a) 9 (b) 1 (c) 7 (d) 2

Q05. The number $\sqrt{3}$ is a/an

(a) integer (b) rational no. (c) irrational no. (d) None of these

Q06. The HCF and LCM of 6, 72 and 120 is, respectively

(a) 8, 360 (b) 6, 340 (c) 6, 360 (d) None of these

Q07. The total number of even prime numbers is

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

Q08. $\frac{22}{7}$ is a

(a) prime no. (b) an integer (c) a rational no. (d) an irrational no.

Q09. The sum of two numbers is 37 and their product is 342. The numbers are

(a) 18, 19 (b) 23, 14 (c) 24, 13 (d) 28, 9

Q10. A number is as bigger than 22 as much it is smaller than 72. The number is

(a) 92 (b) 47 (c) 24 (d) None of these

Q11. If HCF and LCM of two numbers are 4 and 9696, then the product of two numbers is

(a) 9696 (b) 24242 (c) 38784 (d) 4848

Q12. $5+\sqrt{2}+\sqrt{3}$ is

(a) a natural no. (b) an integer (c) a rational no. (d) an irrational no.

Q13. If $\left(\frac{9}{7}\right)^3 \times \left(\frac{49}{81}\right)^{2x-6} = \left(\frac{7}{9}\right)^9$, then the value of x is

(a) 12 (b) 9 (c) 8 (d) 6

Q14. The number .211 2111 21111 211111… is a

(a) terminating decimal

(b) non-terminating repeating decimal

(c) non-terminating decimal which is non-repeating

(d) None of these

Q15. If $m^n = 32$, where m and n are positive integers, then the value of n^{mn} is

(a) 32 (b) 25 (c) 5^{10} (d) 5^{25}

Q16. Prime factorization of 64 is

(a) 2^5 (b) 2^6 (c) 8×8 (d) 64×1

Q17. If p is a prime number and p divides k^2, then p divides

(a) $2k^2$ (b) k (c) 3k (d) None of these

Q18. If the HCF of 85 and 153 is expressible in the form of $85n-153$, then the value of n is

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

Q19. Given that LCM $(91, 26)=182$, then HCF (91, 26) is

(a) 13 (b) 26 (c) 7 (d) 9

Q20. Out of the four numbers (i) $\left(\sqrt{5}-\frac{1}{\sqrt{5}}\right)^3$ (ii) $2.123\overline{123}$ (iii) 2.123123...

(iv) $\left(2\sqrt{3}-\sqrt{2}\right)\left(2\sqrt{3}+\sqrt{2}\right)$, the irrational number is

(a) i (b) ii (c) iii (d) iv

Q21. $7\times11\times13+6$ is

(a) a prime number (b) a composite number

(c) an even number (d) None of these

Q22. If $p^n=(a\times5)^n$, for p^n to end with the digit zero a = _______ for any natural number n.

(a) any natural no. (b) an odd no. (c) any even no. (d) None of these

Q23. HCF is always

(a) multiple of LCM (b) factor of LCM

(c) divisible by LCM (d) Option a and c both

Q24. HCF$(47, 61)=$

(a) 2867 (b) 1 (c) 47 (d) 61

Q25. LCM$(47, 61)=$

(a) 2867 (b) 1 (c) 47 (d) 61

Chapter 02 - Polynomials

Q01. The quadratic polynomials with the sum and the products of its zeroes as $\frac{1}{4}$ and -1 respectively, is

(a) $4x^2+x+1$ (b) $4x^2+x+4$ (c) $4x^2+x-1$ (d) $4x^2-x-4$

Q02. If $x^2+\frac{1}{x^2}=102$, then the value of $x-\frac{1}{x}$ is

(a) 8 (b) 10 (c) 12 (d) 13

Q03. The polynomial $p(x)=x^2+2x+5x^3-3$ is

(a) linear polynomial (b) cubic polynomial

(c) constant polynomial (d) quadratic polynomial

Q04. The quadratic polynomial, the sum and product of whose zeroes are -1 and 1 respectively, is

(a) x^2-1 (b) x^2+1 (c) x^2+x (d) x^2-x

Q05. The zeroes of quadratic polynomial t^2-15 are

(a) $-\sqrt{15},\sqrt{15}$ (b) $\sqrt{15},\sqrt{12}$ (c) $\sqrt{15},-\sqrt{12}$ (d) $\sqrt{15},-15$

Q06. A quadratic polynomials, the sum and product of whose zeroes are $-\frac{1}{4}$ and $\frac{1}{4}$ respectively, is

(a) $4x^2+x+1$ (b) x^2-3x+2 (c) x^2+3x-2 (d) None of these

Q07. If $\left(x+\frac{1}{x}\right)=3$, then $x^2+\frac{1}{x^2}$ is equal to

(a) $\frac{82}{9}$ (b) $\frac{10}{3}$ (c) 7 (d) 11

Q08. If $x^{1/3}+y^{1/3}+z^{1/3}=0$, then

(a) $x+y+z=0$ (b) $x+y+z=3xyz$

(c) $(x+y+z)^3=27xyz$ (d) $x^3+y^3+z^3=0$

Q09. If $p(x)=3x^2-5x$, then $p(2)=$ _______:

(a) 2 (b) 3 (c) 0 (d) None of these

Q10. The quadratic polynomials whose zeroes are $\frac{3}{5}$ and $-\frac{1}{2}$, is

(a) $10x^2-x-3$ (b) $10x^2+x-3$ (c) $10x^2-x+3$ (d) None of these

Chapter 03 - Pair of Linear Equations in two Variables

Q01. The solutions of the equation $2x-y-5=0$ are

(a) $x=2, y=-1$ (b) $x=2, y=1$ (c) $x=1, y=-1$ (d) $x=-2, y=1$

Q02. The sum of digits of a two digit number is 9. Also, 9 times this number is twice the number obtained by reversing the order of the digits. The number is

(a) 20 (b) 16 (c) 18 (d) None of these

Q03. The system of equations $kx-y=2$ and $6x-2y=3$ has a unique solution when

(a) $k=0$ (b) $k\neq 0$ (c) $k=3$ (d) $k\neq 3$

Q04. A boat can row 1 km with stream in 10 minutes and 1 km against the stream in 20 minutes. The speed of the boat in still water is

(a) 1.5 km/hr (b) 3 km/hr (c) 3.4 km/hr (d) 4.5 km/hr

Q05. A boat goes 24 km upstream and 28 km downstream in 6 hours. It goes 30 km upstream and 21 km downstream in 6 hours and 30 minutes. The speed of the boat in still water is

(a) 4 km/hr (b) 6 km/hr (c) 10 km/hr (d) 14 km/hr

Q06. Point (4, 3) lies on the line

(a) $3x+7y=27$ (b) $7x+2y=47$ (c) $3x+4y=24$ (d) $5x-4y=1$

Q07. The speed of train 150 m long is 50 km/hr. The time it will take to cross a platform 600 m long is

(a) 50 sec (b) 54 sec (c) 60 sec (d) None of these

Q08. The graph of an equation $y=-3$ is a line which will be

(a) parallel to x-axis (b) parallel to y-axis

(c) passing through origin (d) on x-axis

Q09. The value of k for which $kx+2y=5$ and $3x+y=1$ have unique solution, is

(a) $k=-1$ (b) $k\neq 6$ (c) $k=6$ (d) $k=2$

Q10. The graph of the equation $x-y=0$ is

(a) parallel to x-axis (b) parallel to y-axis

(c) passing through origin (d) None of these

Chapter 04 - Quadratic Equations

Q01. The general form of a quadratic equation is

(a) ax^2+bx+c (b) $ax^2+bx+c=0$ (c) a^2x+b (d) $ax^2+bx+c=0,\ a\neq 0$

Q02. The number of possible solutions of a quadratic equation are
(a) exactly two (b) at most two (c) at least two (d) None of these

Q03. The discriminant of the equation $bx^2+ax+c=0,\ b\neq 0$ is given by
(a) $\sqrt{b^2-4ac}$ (b) $\sqrt{a^2+4bc}$ (c) $\sqrt{a^2-4bc}$ (d) $\sqrt{b^2+4ac}$

Q04. If the roots of a quadratic equation are equal, then the discriminant is
(a) 1 (b) 0 (c) greater than 0 (d) less than 0

Q05. The roots of $3x^2-7x+4=0$ are
(a) rationals (b) irrationals (c) positive integers (d) negative integers

Q06. The roots of equation $x+\frac{16}{x}=10$ are
(a) 4, 6 (b) 4, 4 (c) 4, 5 (d) 2, 8

Q07. If α, β are the roots of $x^2+px+q=0$, then the value of $\frac{\alpha}{\beta}+\frac{\beta}{\alpha}$ is
(a) $\frac{p^2-2q}{q}$ (b) $\frac{2q-p^2}{q}$ (c) $\frac{p^2+2q}{q}$ (d) None of these

Q08. If the roots of $ax^2+bx+c=0$ be equal, then the value of c is
(a) $-\frac{b}{2a}$ (b) $\frac{b}{2a}$ (c) $-\frac{b^2}{4a}$ (d) $\frac{b^2}{4a}$

Q09. If the sum of the roots of an equation is 6 and one root is $3-\sqrt{5}$, then the equation is
(a) $x^2-6x+4=0$ (b) $x^2-4x+6=0$ (c) $x^2-6x+5=0$ (d) None of these

Q10. If α, β be the roots of $ax^2+bx+c=0$, then the value of $\alpha^2+\beta^2$ is
(a) $\frac{b^2-2ac}{2a}$ (b) $\frac{b^2-4ac}{2a}$ (c) $\frac{b^2-2ac}{a^2}$ (d) $\frac{b^2+4ac}{2ac}$

Chapter 05 - Arithmetic Progression

Q01. If a, b, c are in A.P., then
(a) $a+c=2b$ (b) $b+a=2c$ (c) $c=\frac{a+b}{2}$ (d) $a+c=b$

Q02. Next term of the A.P. 9, 11, 13, 15, … is
(a) 20 (b) 17 (c) 18 (d) 19

Q03. The sum of 6^{th} and 7^{th} terms of an A.P. is 39 and the common difference is 3, then the first term of A.P. is
(a) 2 (b) –3 (c) 4 (d) 3

Q04. The sum of three numbers in A.P. is 30. If the greatest is 13, then its common difference is
(a) 2 (b) 4 (c) 5 (d) 3

Q05. The 9^{th} term from the end of the A.P. 7, 11, 15, …, 147 is
(a) 135 (b) 125 (c) 115 (d) 110

Q06. The sum of first 10 natural numbers is
(a) 50 (b) 60 (c) 55 (d) 65

Q07. The common difference of the A.P. $8\frac{1}{8}, 8\frac{2}{8}, 8\frac{3}{8}, \ldots$ is
(a) $\frac{1}{8}$ (b) $1\frac{1}{8}$ (c) $8\frac{1}{8}$ (d) 1

Q08. How many natural numbers up to 300 are divisible by 17?
(a) 13 (b) 15 (c) 17 (d) 19

Q09. The sum of first n natural number is

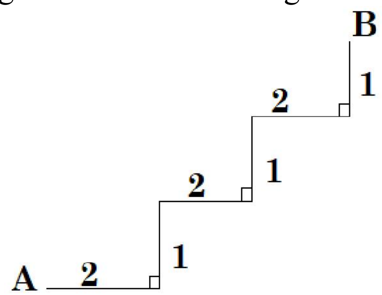
(a) $0.5n(n+1)$ (b) $\frac{n^2}{2}$ (c) $n+2$ (d) $0.5+(n+1)$

Q10. The fifteenth term of the arithmetic progression –23, –19, –15, … is
(a) 30 (b) 31 (c) 32 (d) 33

Chapter 06 - Triangles

Q01. Given that $\Delta ABC \sim \Delta DEF$. If $DE = 2AB$ and $BC = 3$ cm, then EF is equal to
(a) 12 cm (b) 2 cm (c) 1.5 cm (d) 6 cm

Q02. See the figure given below. The straight line distance between A and B is



(a) $5\sqrt{3}$ (b) 5 (c) $3\sqrt{5}$ (d) $5\sqrt{2}$

Q03. In a triangle ABC, $\angle A = 25^\circ$ and $\angle B = 35^\circ$; $AB = 16$ units.
In another triangle PQR, $\angle P = 25^\circ$ and $\angle Q = 35^\circ$; $PQ = 4$ units.
Which of the following is true?
(a) $\Delta ABC = \Delta PQR$ (b) $\Delta ABC \approx \Delta PQR$ (c) $\Delta ABC \cong \Delta PQR$ (d) $\Delta ABC \sim \Delta PQR$

Q04. The altitude of an equilateral triangle, having the length of its side as 12 cm, is
(a) $6\sqrt{2}$ cm (b) 6 cm (c) 8.5 cm (d) $6\sqrt{3}$ cm

Q05. The triangles are similar, if
(a) their corresponding angles are equal (b) their corresponding sides are proportional
(c) Options 'a' and 'b' both are correct (d) there is at least one angle of 90º

Q06. If in two triangles ΔDEF and ΔPQR, $\angle D = \angle Q$ and $\angle R = \angle E$, then which of the following is **not** true?
(a) $\frac{DE}{QR} = \frac{DF}{PQ}$ (b) $\frac{DE}{PQ} = \frac{EF}{RP}$ (c) $\frac{EF}{PR} = \frac{DF}{PQ}$ (d) $\frac{EF}{RP} = \frac{DE}{QR}$

Q07. All the equilateral triangles are always _______________.
(a) Similar (b) Congruent (c) both (a) and (b) (d) None of these

Q08. In ΔABC, D and E are points on the sides AB and AC respectively such that DE || BC.
If $\frac{AD}{DB} = \frac{2}{3}$ and $AC = 18$ cm, then AE is equal to
(a) 5.2 cm (b) 6.2 cm (c) 7.2 cm (d) 8.2 cm

Q09. In a right triangle ABC right angled at C, $AC = BC$. Then $AB^2 =$ ____ $\times AC^2$.
(a) 1 (b) 2 (c) 4 (d) None of these

Q10. If the three sides of a triangle are a, $\sqrt{3}a$ and $\sqrt{2}a$, then the measure of the angle opposite to the longest side is
(a) 60° (b) 90° (c) 45° (d) 30°

Chapter 07 - Coordinate Geometry

Q01. P is a point on x-axis at a distance of 3 units from y-axis to its left. The coordinates of P are
(a) (3, 0) (b) (0, 3) (c) (–3, 0) (d) (0, –3)

Q02. The coordinates of the point where the line $\frac{x}{a}+\frac{y}{b}=7$ intersects y-axis are
(a) (a, 0) (b) (0, b) (c) (0, 7b) (d) (7a, 0)

Q03. The area of the triangle OAB, the coordinates of the points A(4, 0), B(0, –7) and O is origin, is
(a) 11 sq.units (b) 18 sq.units (c) 28 sq.units (d) None of these

Q04. The line $\frac{x}{2}+\frac{y}{4}=1$ intersects the axes at P and Q, the coordinates of the midpoint of PQ are
(a) (1, 2) (b) (2, 0) (c) (0, 4) (d) (2, 1)

Q05. The distance between the lines $2x+4=0$ and $x-5=0$, is
(a) 9 units (b) 1 unit (c) 5 units (d) 7 units

Q06. The distance between the points $(5\cos 35^\circ,\ 0)$ and $(0,\ 5\cos 55^\circ)$ is
(a) 10 units (b) 1 unit (c) 5 units (d) 2 units

Q07. If 'a' is any positive integer such that the distance between the points P(a, 2) and Q(3, –6) is 10 units, then the value of 'a' is
(a) –3 (b) 6 (c) 9 (d) 3

Q08. The perimeter of triangle formed by the points (0, 0), (2, 0) and (0, 2) is
(a) 4 units (b) 6 units (c) $6\sqrt{2}$ units (d) $4+2\sqrt{2}$ units

Q09. The points (1, 2), (–5, 6) and (a, –2) are collinear only, if a =
(a) –3 (b) 7 (c) 2 (d) 5

Q10. The two points of line segment are (a, b) and (–a, –b), then the length of the line is
(a) $\sqrt{a^2+b^2}$ (b) $2\sqrt{a^2+b^2}$ (c) $\frac{2}{3}\sqrt{a^2+b^2}$ (d) None of these

Chapter 08 - Introduction to Trigonometry

Q01. If $x=r\sin\theta$ and $y=r\cos\theta$, then the value of x^2+y^2 is
(a) r (b) r^2 (c) $\frac{1}{r}$ (d) 1

Q02. The value of $\operatorname{cosec}30^\circ-\sec 60^\circ$ is
(a) 0 (b) 1 (c) 90° (d) 50°

Q03. If $3\sec\theta-5=0$, then $\cot\theta$ is equal to
(a) $\frac{5}{3}$ (b) $\frac{4}{5}$ (c) $\frac{3}{4}$ (d) $\frac{3}{5}$

Q04. If $\theta=45^\circ$, then $\sec\theta\cot\theta-\operatorname{cosec}\theta\tan\theta$ is
(a) 0 (b) 1 (c) $2\sqrt{2}$ (d) $\sqrt{2}$

Q05. If $\cos\theta\times\frac{1}{\sec\theta}=1$ and θ is an acute angle, then θ is
(a) 90° (b) 60° (c) 30° (d) 0°

Q06. Triangle TRY is a right angled isosceles triangle, then $\cos T+\cos R+\cos Y$ is
(a) $\sqrt{2}$ (b) $2\sqrt{2}$ (c) $1+2\sqrt{2}$ (d) $1+\frac{1}{\sqrt{2}}$

Q07. If triangles ABC and PRT are similar such that $\angle C=\angle R=90^\circ$ and $\frac{AC}{AB}=\frac{3}{5}$, then $\sin T$ is
(a) $\frac{3}{5}$ (b) $\frac{5}{3}$ (c) $\frac{4}{5}$ (d) $\frac{5}{4}$

Q08. If $k+7\sec^2 62^\circ-7\tan^2 62^\circ=7$, then the value of k is

(a) 1 (b) 0 (c) 7 (d) $\frac{1}{7}$

Q09. The value of $\cot^2\theta - \left(\frac{1}{\sin\theta} \times \operatorname{cosec}\theta\right)$ is

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

Q10. $\frac{\sin\theta}{\sqrt{1-\sin^2\theta}}$ can also be written as

(a) $\cot\theta$ (b) $\sqrt{\sin\theta}$ (c) $\frac{\sin\theta}{\sqrt{\cos\theta}}$ (d) $\tan\theta$

Q11. If $\sin 30^\circ \tan 45^\circ = \frac{\sec 60^\circ}{k}$, then the value of k is

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

Q12. $1+\tan^2\theta$ equals

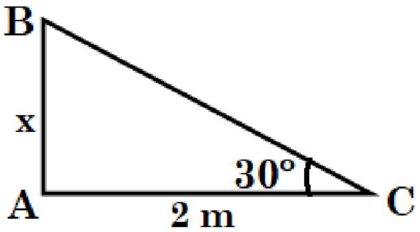
(a) $\sec\theta$ (b) $\sec^2\theta$ (c) $\sec 2\theta$ (d) $\cot^2\theta$

Q13. If $\operatorname{cosec}\theta = \frac{13}{12}$, then

(a) $\tan\theta = \frac{12}{5}$ (b) $\tan\theta = -\frac{5}{12}$ (c) $\tan\theta = \frac{12}{25}$ (d) $\tan\theta = \pm\frac{12}{25}$

Chapter 09 - Applications of Trigonometry

Q01. In the figure given below, if $AC = 2$ m and $BA = x$, then x equals



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

Q02. The angle of elevation of the top of a tower from the points at a distance of 4 m and 9 m from the base of the land in the same straight line with it, are complementary. Then the height of the tower is

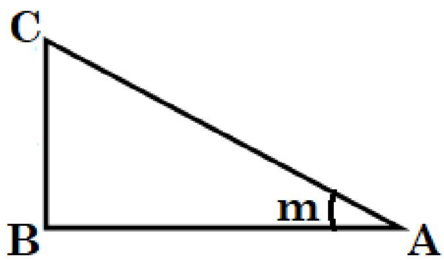
(a) 4 m (b) 7 m (c) 12 m (d) 6 m

Q03. The angle of elevation of the top of a tower from two points at distances 'a' and 'b' from the base and on the same straight line with it are complimentary. The height of the tower is

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

Q04. In the figure given below, $\tan m = \frac{3}{4}$. If AB = 12 cm, then BC is

(a) 8 cm (b) 12 cm
(c) 10 cm (d) 9 cm



Q05. A tower stands vertically on the ground, form a point on the ground, which is 15 m away from the foot of the tower, the angle of elevation of the top of the tower is found to be 60º. The height of tower is
(a) 3 m (b) $15\sqrt{3}$ m (c) 15 m (d) $3\sqrt{15}$ m

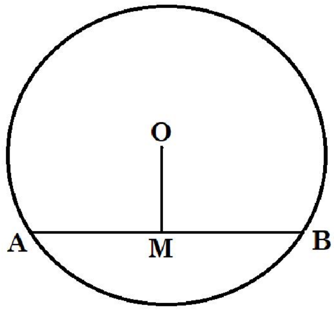
Chapter 10 - Circles

Q01. The complement of 63º is
(a) 118º (b) 28º (c) 38º (d) None of these

Q02. The supplement of 60º is
(a) 30º (b) 40º (c) 120º (d) None of these

Q03. An angle which is greater than 180º but less than 360º is called
(a) an acute angle (b) an obtuse angle (c) an adjacent angle (d) a reflex angle

Q04. In the following figure, O is the centre of a circle and AB is chord of circle, whose length is 24 cm. If the length of the perpendicular OM on AB is 5 cm, the radius of the circle is



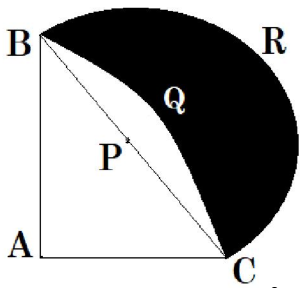
(a) 10 cm (b) 12 cm
(c) 13 cm (d) 14.5 cm

Q05. A tangent PQ at a point P of a circle of radius 5 cm meets a line through the centre O at a point Q so that $OQ = 12$ cm. Length PQ is
(a) 12 cm (b) 13 cm (c) 8.5 cm (d) $\sqrt{119}$ cm

Q06. If the radius of the circle is 13 cm and the chord is 10 cm, then the length of the perpendicular drawn from the centre to the chord is
(a) 12 cm (b) 13 cm (c) 8 cm (d) None of these

Chapter 11 - Areas Related to Circles

Q01. In the given figure, ABC is quadrant of radius 14 cm and a semicircle is drawn taking BC as the diameter. The area of the shaded region is



(a) 102 cm^2 (b) 98 cm^2 (c) 89 cm^2 (d) 201 cm^2

Q02. If the biggest hand of a clock is 15 cm long, then the distance covered by it in 40 minutes will be
(a) 31.5 cm (b) 72.8 cm (c) 24.1 cm (d) None of these

Q03. The area of a triangle whose sides are respectively 3, 4 and 5 (in cm) is
(a) 6 cm^2 (b) 60 cm^2 (c) 30 cm^2 (d) 10 cm^2

Q04. The radius of circle is increased by 1 cm, then the ratio of the new circumference to the diameter is (if diameter of new circle is considered)

(a) $\pi:2$ (b) $\pi+1$ (c) $\pi:1$ (d) None of these

Q05. A square and an equilateral triangle have equal perimeters. If the diagonal of the square is $6\sqrt{2}$ cm, then the area of the triangle is

(a) $16\sqrt{2}$ cm^2 (b) $16\sqrt{3}$ cm^2 (c) $12\sqrt{2}$ cm^2 (d) None of these

Q06. The area of a circle inscribed in an equilateral triangle is 48π sq.units. Then the perimeter of triangle (in units) is given as

(a) $72\sqrt{3}$ (b) 72 (c) $48\sqrt{3}$ (d) 36

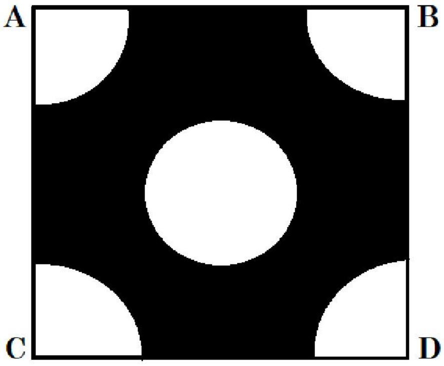
Q07. The minute hand of a clock is $\sqrt{21}$ cm long. The area described by minute hand on the face of the clock between 7:00 am to 7:05 am is

(a) 4.5 cm^2 (b) 6.6 cm^2 (c) 5.5 cm^2 (d) Can't be determined

Q08. If the minute hands of two clocks are of length 3 cm and 4 cm respectively. The ratio of the areas in two clocks covered by the minute hands in $\frac{1}{2}$ hour will be

(a) 9:16 (b) 4:9 (c) 16:9 (d) None of these

Q09. From each corner of a square of sides 4 cm a quadrant of a circle of a radius 1 cm is cut and also a circle of a diameter 2 cm is cut. The area of the remaining portion of the square is (see the figure)



(a) 10.25 cm^2 (b) 9.72 cm^2 (c) 11.52 cm^2 (d) None of these

Chapter 12 - Surface Areas and Volumes

Q01. The curved surface area (in sq. units) of a cylinder with the diameter 2 units and height of 1 unit is

(a) π (b) 2π (c) 3π (d) 4π

Q02. The volume (in cubic units) of cylinder of radius and height both of 1 unit is given by

(a) π (b) 2π (c) 3π (d) 4π

Q03. The volume (in cubic units) of cone of radius and height both of 1 unit is given by

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

Q04. The area of an equilateral triangle is $\sqrt{3}$ m^2, then its side is

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

Q05. Volume of the cubes is in the ratio of 8:125. The ratio of their surface areas is

(a) 8:125 (b) 2:5 (c) 4:25 (d) 16:25

Q06. Volume (in cubic units) of a sphere of radius 3 units is given by

(a) 18π (b) 36π (c) 36 (d) 54π

Q07. Diameter of a sphere is 6 cm. It is melted and drawn into a wire of radius 0.2 cm. Then the length of the wire is

(a) 6 cm (b) 700 cm (c) 900 cm (d) None of these

Q08. The surface area of the walls of a cuboidal room is

(a) $2(l + b + h)$ (b) $l\,b\,h$ (c) $2(l\,b + b\,h + l\,h)$ (d) $2(l + b)\,h$

Q09. If a right circular cone of vertical height 12 cm has a volume of 616 cm^3, then the radius of its base is

(a) 6 cm (b) 7 cm (c) 8 cm (d) 9 cm

Q10. If all the sides of a cube are doubled, then its area will become

(a) 2 times (b) 3 times (c) 4 times (d) 8 times

Chapter 13 - Statistics

Q01. Weight of 40 eggs were recorded as given below.

Weights (in gm)	85-89	90-94	95-99	100-104	105-109
No. of eggs	10	12	12	4	2

The lower limit of the median class is

(a) 90 (b) 95 (c) 94.5 (d) 89.5

Q02. Mode is the value of the variable which has

(a) maximum frequency (b) minimum frequency
(c) mean frequency (d) middle-most frequency

Q03. The relationship between mean, median and mode for a moderately skewed distribution is

(a) mode = median – 2 mean (b) mode = 3 median – 2 mean
(c) mode = 2 median – 3 mean (d) mode = median – mean

Q04. What is the mode if mean and median are 10.5 and 9.6 respectively?

(a) 7 (b) 7.8 (c) 8 (d) 8.4

Q05. Mode and mean of a data are 12k and 15k respectively. Then the median of the data is

(a) 16k (b) 15k (c) 12k (d) 14k

Chapter 14 - Probability

Q01. If E is an event, then the value of $P(E) + P(\overline{E})$ is

(a) 0 (b) 1 (c) 2 (d) None of these

Q02. If P(E) is 38% for an event E, then the probability of failure of this event is

(a) 12% (b) 62% (c) 100% (d) 0

Q03. In a survey, it is found that every fifth person possess a vehicle. The probability of a person ‘not possessing the vehicle’ is

(a) $\frac{1}{5}$ (b) $\frac{4}{5}$ (c) $\frac{3}{5}$ (d) 1

Q04. Which of the following can’t be the probability of an event?

(a) $\frac{2}{3}$ (b) $-\frac{1}{5}$ (c) 15 % (d) 0.7

Q05. If ‘p’ is the probability of an impossible event, then $p =$

(a) $\frac{2}{3}$ (b) 0.1 (c) 1 (d) 0

Q06. The probability of a sure event is

(a) 0 (b) 1 (c) 2 (d) None of these

Q07. What is the probability that an ordinary year has 53 Sundays?

(a) $\frac{6}{13}$ (b) $\frac{1}{7}$ (c) $\frac{2}{7}$ (d) $\frac{3}{8}$

Q08. A bag contains 9 red, 7 white and 4 black balls. A ball is drawn randomly. The probability that the 'ball drawn is not red' is

(a) $\frac{9}{20}$ (b) $\frac{9}{11}$ (c) $\frac{2}{11}$ (d) $\frac{11}{20}$

Q09. If a die is thrown, and the probability of getting a number less than 5 is given by p, then which of the following is true for p?

(a) 1 (b) 0 (c) $0 < p < 1$ (d) $p > 1$

Q10. If red face cards are removed from the deck of 52 playing cards, then the probability of getting a black jack is

(a) $\frac{2}{46}$ (b) $\frac{2}{52}$ (c) $\frac{4}{48}$ (d) $\frac{2}{23}$