

1 MARK QUESTIONS

1. Relations and Functions

- If $n(A \times B) = 6$ and $A = \{1, 3\}$ then $n(B)$ is
A) 1 B) 2
C) 3 D) 6
- $A = \{a, b, p\}$, $B = \{2, 3\}$, $C = \{p, q, r, s\}$ then $n[(A \cup C) \times B]$ is
A) 8 B) 20
C) 12 D) 16
- 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) $(D \times A) \subset (B \times A)$
- 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
- The range of the relation $R = \{(x, x^2) \mid x \text{ is a prime number less than } 13\}$ is
A) $\{2, 3, 5, 7\}$ B) $\{2, 3, 5, 7, 11\}$
C) $\{4, 9, 25, 49, 121\}$ D) $\{1, 4, 9, 25, 49, 121\}$
- 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) $(3, -2)$
- 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}
- 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) $(6, 6)$
- Let $A = \{1, 2, 3, 4\}$ and $B = \{4, 8, 9, 10\}$. A function $f : A \rightarrow B$ 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 $g(x) = \frac{1}{3x}$, then $f \circ g$ is

- A) $\frac{3}{2x^2}$ B) $\frac{2}{3x^2}$
C) $\frac{2}{9x^2}$ D) $\frac{1}{6x^2}$

11. If $f : A \rightarrow B$ 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) $f(xy)^3 \geq f(x).f(y)$
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 $g(x) = \alpha x + \beta$ then the values of a and b 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

2. Numbers and Sequences

- 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) $0 < r \leq b$
- 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
- 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
A) 2025 B) 5220
C) 5025 D) 2520
6. $74k \equiv \underline{\hspace{2cm}} \pmod{100}$
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 $B = 2^{64} + 2^{63} + 2^{62} + \dots + 2^0$ which of the following is true?
A) B is 264 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 3
A) 124 B) 127
C) 23 D) 181
14. If the sequence t_1, t_2, t_3, \dots are in A.P. then the sequence $t_6, t_{12}, t_{18}, \dots$ 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 $(1^3 + 2^3 + 3^3 + \dots + 15^3) - (1 + 2 + 3 + \dots + 15)$ is
A) 14400 B) 14200
C) 14280 D) 14520

3. Algebra

1. A system of three linear equations in three variables is inconsistent if their planes
A) intersect only at a point
B) intersect in a line
C) coincides with each other
D) do not intersect
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) $\left(y + \frac{1}{y}\right)^2$
C) $\left(y - \frac{1}{y}\right)^2 + 2$ 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) $\frac{x^2 - 7x + 40}{(x^2 - 25)(x + 1)}$ D) $\frac{x^2 + 10}{(x^2 - 25)(x + 1)}$
7. The square root of is $\frac{256x^8y^4z^{10}}{25x^6y^6z^6}$ 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 equation 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 $A = \begin{pmatrix} 1 & 3 & 5 & 7 \\ 2 & 4 & 6 & 8 \\ 9 & 11 & 13 & 15 \end{pmatrix}$
 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 $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{pmatrix}$,
 $B = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{pmatrix}$
- (i) A^2 (ii) B^2
 (iii) AB (iv) BA
- A) (i) and (ii) only B) (ii) and (iii) only
 C) (ii) and (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

4. Geometry

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

- A) $\angle B = \angle E$ B) $\angle A = \angle D$
 C) $\angle B = \angle D$ D) $\angle A = \angle F$

2. In $\triangle LMN$, $\angle L = 60^\circ$, $\angle M = 50^\circ$.
 If $\triangle LMN \sim \triangle PQR$ then the value of $\angle R$ is

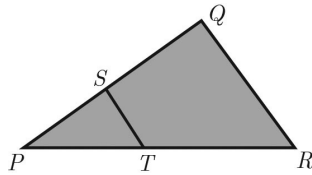
- A) 40° B) 70°
 C) 30° D) 110°

3. If $\triangle ABC$ is an isosceles triangle with $\angle C = 90^\circ$ and $AC = 5$ cm, then AB is

- A) 2.5 cm B) 5 cm
 C) 10 cm D) $5\sqrt{2}$ cm

4. In a given figure $ST \parallel QR$, $PS = 2$ cm and $SQ = 3$ cm. Then the ratio of the area of $\triangle PQR$ to the area of $\triangle PST$ is

- A) 25 : 4
 B) 25 : 7
 C) 25 : 11
 D) 25 : 13



5. The perimeters of two similar triangles $\triangle ABC$ and $\triangle PQR$ are 36 cm and 24 cm respectively. If $PQ = 10$ cm, 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) 15 cm

6. If in $\triangle ABC$, $DE \parallel BC$. $AB = 3.6$ cm, $AC = 2.4$ cm and $AD = 2.1$ cm then the length of AE is

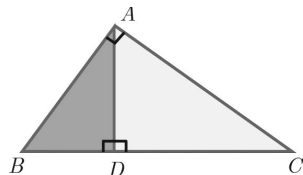
- A) 1.4 cm B) 1.8 cm
 C) 1.2 cm D) 1.05 cm

7. In a $\triangle ABC$, AD is the bisector of $\angle BAC$. If $AB = 8$ cm, $BD = 6$ cm and $DC = 3$ cm. The length of the side AC is

- A) 6 cm B) 4 cm
 C) 3 cm D) 8 cm

8. In the adjacent figure $\angle BAC = 90^\circ$ and $AD \perp BC$ then

- A) $BD \cdot CD = BC^2$
 B) $AB \cdot AC = BC^2$
 C) $BD \cdot CD = AD^2$
 D) $AB \cdot AC = AD^2$

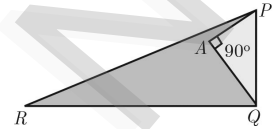


9. Two poles of heights 6 m and 11 m stand vertically on a plane ground. If the distance between their feet is 12 m, what is the distance between their tops?

- A) 13 m B) 14 m
 C) 15 m D) 12.8 m

10. In the given figure, $PR = 26$ cm, $QR = 24$ cm, $\angle PAQ = 90^\circ$, $PA = 6$ cm and $QA = 8$ cm. 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?

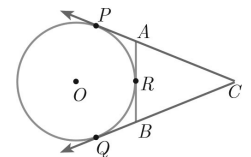
- A) one B) two
 C) infinite D) zero

13. The two tangents from an external points P to a circle with centre at O are PA and PB. If $\angle APB = 70^\circ$ then the value of $\angle AOB$ is

- A) 100° B) 110°
 C) 120° D) 130°

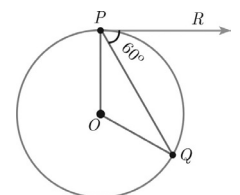
14. In figure CP and CQ are tangents to a circle with centre at O. ARB is another tangent touching the circle at R. If $CP = 11$ cm and $BC = 7$ cm, then the length of BR is

- A) 6 cm
 B) 5 cm
 C) 8 cm
 D) 4 cm



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°



5. Coordinate 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 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 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 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) $x + 3y - 3 = 0$; $x - y - 7 = 0$

7. Mensuration

1. The curved surface area of a right circular cone of height 15 cm and base diameter 16 cm is
 - A) $60\pi \text{ cm}^2$
 - B) $68\pi \text{ cm}^2$
 - C) $120\pi \text{ cm}^2$
 - D) $136\pi \text{ cm}^2$
2. If two solid hemispheres of same base radius r units are joined together along their bases, then curved surface area 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 5 cm and slant height is 13 cm will be
 - A) 12 cm
 - B) 10 cm
 - C) 13 cm
 - D) 5 cm
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 14 cm and the width is 4 cm. If its height is 20 cm, the volume of the material in it is
 - A) $5600\pi \text{ cm}^3$
 - B) $11200\pi \text{ cm}^3$
 - C) $56\pi \text{ cm}^3$
 - D) $3600\pi \text{ cm}^3$
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) $3x$ cm
 - B) x cm
 - C) $4x$ cm
 - D) $2x$ cm
10. A frustum of a right circular cone is of height 16 cm with radii of its ends as 8 cm and 20 cm. Then, the volume of the frustum is
 - A) $3328\pi \text{ cm}^3$
 - B) $3228\pi \text{ cm}^3$
 - C) $3240\pi \text{ cm}^3$
 - D) $3340\pi \text{ cm}^3$
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 cm^3) of the greatest sphere that can be cut off from a cylindrical log of wood of base radius 1 cm and height 5 cm 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 are 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

8. Statistics and Probability

- Which of the following is not a measure of dispersion?
 - Range
 - Standard deviation
 - Arithmetic mean
 - Variance
- The range of the data 8, 8, 8, 8, 8,, 8 is
 - 0
 - 1
 - 8
 - 3
- The sum of all deviations of the data from its mean is
 - Always positive
 - always negative
 - zero
 - non-zero integer
- The mean of 100 observations is 40 and their standard deviation is 3. The sum of squares of all deviations is
 - 40000
 - 160900
 - 160000
 - 30000
- Variance of first 20 natural numbers is
 - 32.25
 - 44.25
 - 33.25
 - 30
- The standard deviation of a data is 3. If each value is multiplied by 5 then the new variance is
 - 3
 - 15
 - 5
 - 225
- If the standard deviation of x, y, z is p then the standard deviation of $3x + 5, 3y + 5, 3z + 5$ is
 - $3p + 5$
 - $3p$
 - $p + 5$
 - $9p + 15$
- If the mean and coefficient of variation of a data are 4 and 87.5% then the standard deviation is
 - 3.5
 - 3
 - 4.5
 - 2.5
- Which of the following is incorrect?
 - $P(A) > 1$
 - $0 \leq P(A) \leq 1$
 - $P(\phi) = 0$
 - $P(A) + P(\bar{A}) = 1$
- The probability a red marble selected at random from a jar containing p red, q blue and r green marbles is
 - $\frac{q}{p+q+r}$
 - $\frac{p}{p+q+r}$
 - $\frac{p+q}{p+q+r}$
 - $\frac{p+r}{p+q+r}$
- 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
 - $\frac{3}{10}$
 - $\frac{7}{10}$
 - $\frac{3}{9}$
 - $\frac{7}{9}$
- 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
 - 2
 - 1
 - 3
 - 1.5
- 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
 - 5
 - 10
 - 15
 - 20
- If a letter is chosen at random from the English alphabets $\{a, b, \dots, z\}$, then the probability that the letter chosen precedes x
 - $\frac{12}{13}$
 - $\frac{1}{13}$
 - $\frac{23}{26}$
 - $\frac{3}{26}$
- A purse contains 10 notes of ₹ 2000, 15 notes of ₹ 500, and 25 notes of ₹ 200. One note is drawn at random. What is the probability that the note is either a ₹ 500 note or ₹ 200 note?
 - $\frac{1}{5}$
 - $\frac{3}{10}$
 - $\frac{2}{3}$
 - $\frac{4}{5}$
