CBSE 2026 Maths Important Topics + PYQ

Chapterwise weightage and Most asked topics

Chapter Name	Average Weightage	Primary focus of Questions / Most asked topics
Relations and Functions	4 - 6 Marks	Equivalence relations (reflexive, symmetric, transitive checks); One-one, onto, and bijective functions.
Inverse Trigonometric Functions	2 - 4 Marks	Principal value branches; simplifying inverse trigonometric expressions; domain and range.
Matrices	6 - 8 Marks	Matrix operations; Symmetric and Skew-symmetric properties; solving systems of linear equations using the Matrix Method.
Determinants	6 - 8 Marks	Evaluating determinants; Adjoint and Inverse of a matrix; Area of triangles using the determinant method.
Continuity and Differentiability	8 - 10 Marks	Continuity at a specific point (finding 'k'); differentiability; Chain rule, implicit and parametric differentiation; Second-order derivatives.
Application of Derivatives	8 - 10 Marks	Rate of change of quantities; Strictly increasing/decreasing intervals; Local and Absolute Maxima and Minima; Optimization problems.
Integrals	10 - 12 Marks	Integration by substitution, partial fractions, and by parts; Properties of definite integrals for evaluation.
Application of Integrals	4 - 6 Marks	Calculating the area bounded by simple curves (circles, ellipses, parabolas) and lines.
Differential Equations	6 - 8 Marks	Finding order and degree; General and Particular solutions; solving Homogeneous and Linear Differential Equations.
Vector Algebra	6 - 8 Marks	Magnitude and unit vectors; Dot and Cross products; Projection of one vector onto another; Angle between vectors.
Three-Dimensional Geometry	6 - 8 Marks	Direction cosines and ratios; Cartesian and vector equations of lines; Shortest distance between skew lines; Image of a point in a line.
Linear Programming	5 Marks	Graphical method; identifying feasible regions; using corner points to find optimal solutions.
Probability	8 Marks	Conditional probability; Independent events; Bayes' Theorem; Probability distribution and Mean of random variables.

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Top 15 Most Asked MCQs from Previous Year Papers

Q1.

Four friends Abhay, Bina, Chhaya and Devesh were asked to simplify 4 AB + 3(AB + BA) – 4 BA, where A and B are both matrices of order 2 × 2. It is known that $A \neq B \neq I$ and $A^{-1} \neq B$.

Their answers are given as :

Abhay : 6 AB

Bina : 7 AB – BA

Chhaya : 8 AB

Devesh : 7 BA – AB

Who answered it correctly ?

(A) Abhay (B) Bina

(C) Chhaya (D) Devesh

Q2.

If p and q are respectively the order and degree of the differential equation $\frac{d}{dx}\left(\frac{dy}{dx}\right)^3 = 0$, then (p – q) is

(A) 0 (B) 1

(C) 2 (D) 3

Q3.

The values of λ so that $f(x) = \sin x - \cos x - \lambda x + C$ decreases for all real values of x are :

(A) $1 < \lambda < \sqrt{2}$ (B) $\lambda \geq 1$

(C) $\lambda \geq \sqrt{2}$ (D) $\lambda < 1$

Q4.

The area of the region enclosed between the curve $y = x|x|$, x-axis, $x = -2$ and $x = 2$ is :

(A) $\frac{8}{3}$ (B) $\frac{16}{3}$

(C) 0 (D) 8

Q5.

The integrating factor of the differential equation $\left(\frac{e^{-2\sqrt{x}}}{\sqrt{x}} - \frac{y}{\sqrt{x}}\right)\frac{dx}{dy} = 1$ is :

(A) $e^{-1/\sqrt{x}}$ (B) $e^{2/\sqrt{x}}$

(C) $e^{2\sqrt{x}}$ (D) $e^{-2\sqrt{x}}$

Q6.

If $f(x) = \begin{cases} \frac{\log(1+ax) + \log(1-bx)}{x}, & \text{for } x \neq 0 \\ k, & \text{for } x = 0 \end{cases}$

is continuous at x = 0, then the value of k is :

(A) a (B) a + b

(C) a – b (D) b

Q7.

If $y = a\cos(\log x) + b\sin(\log x)$, then $x^2y_2 + xy_1$ is :

(A) cot (log x) (B) y

(C) – y (D) tan (log x)

Q8.

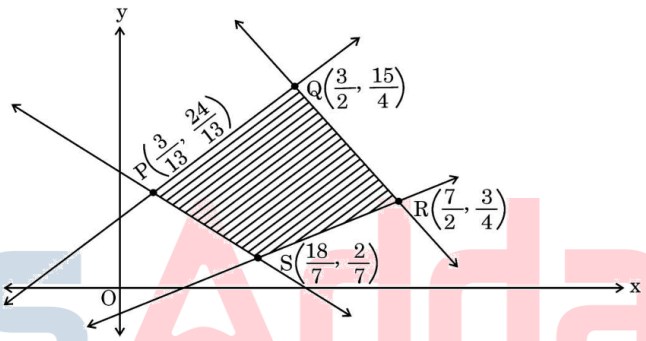
$\int \frac{x+5}{(x+6)^2} e^x \, dx$ is equal to :

(A) log (x + 6) + C (B) $e^x + C$

(C) $\frac{e^x}{x+6} + C$ (D) $\frac{-1}{(x+6)^2} + C$

Q9.

For a Linear Programming Problem (LPP), the given objective function is Z = x + 2y. The feasible region PQRS determined by the set of constraints is shown as a shaded region in the graph.



(Note : The figure is not to scale)

$P \equiv \left(\frac{3}{13}, \frac{24}{13}\right)$, $Q \equiv \left(\frac{3}{2}, \frac{15}{4}\right)$, $R \equiv \left(\frac{7}{2}, \frac{3}{4}\right)$, $S \equiv \left(\frac{18}{7}, \frac{2}{7}\right)$

Which of the following statements is correct ?

(A) Z is minimum at $S\left(\frac{18}{7}, \frac{2}{7}\right)$

(B) Z is maximum at $R\left(\frac{7}{2}, \frac{3}{4}\right)$

(C) (Value of Z at P) > (Value of Z at Q)

(D) (Value of Z at Q) < (Value of Z at R)

Q10.

Domain of $f(x) = \cos^{-1} x + \sin x$ is :

(A) R (B) (–1, 1)

(C) [–1, 1] (D) ϕ

Q11.

A coin is tossed and a card is selected at random from a well shuffled pack of 52 playing cards. The probability of getting head on the coin and a face card from the pack is :

(A) $\frac{2}{13}$ (B) $\frac{3}{26}$

(C) $\frac{19}{26}$ (D) $\frac{3}{13}$

Q12.

A student tries to tie ropes, parallel to each other from one end of the wall to the other. If one rope is along the vector $3\hat{i} + 15\hat{j} + 6\hat{k}$ and the other is along the vector $2\hat{i} + 10\hat{j} + \lambda\hat{k}$, then the value of λ is :

(A) 6 (B) 1

(C) $\frac{1}{4}$ (D) 4

Q13.

If A is a square matrix of order 2 such that det (A) = 4, then det (4 adj A) is equal to :

(A) 16 (B) 64

(C) 256 (D) 512

Q14.

If $\vec{a} + \vec{b} + \vec{c} = \vec{0}$, $|\vec{a}| = \sqrt{37}$, $|\vec{b}| = 3$ and $|\vec{c}| = 4$, then angle between $\vec{b}$ and $\vec{c}$ is

(A) $\frac{\pi}{6}$ (B) $\frac{\pi}{4}$

(C) $\frac{\pi}{3}$ (D) $\frac{\pi}{2}$

Q15.

If E and F are two independent events such that $P(E) = \frac{2}{3}$, $P(F) = \frac{3}{7}$, then $P(E/\overline{F})$ is equal to :

(A) $\frac{1}{6}$ (B) $\frac{1}{2}$

(C) $\frac{2}{3}$ (D) $\frac{7}{9}$

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