CHAPTER-WISE LIST of MOST IMPORTANT & HIGHLY EXPECTED QUESTIONS for Class 12 Maths's (Maharashtra Board).

Math's IMP

📄 PART–A : ALGEBRA & GEOMETRY

🟢 CHAPTER 1: Mathematical Logic

(Very high scoring – MCQs + short answers every year)

1. Write the **negation** of a given statement.
2. Find the **converse, inverse and contrapositive** of a statement.
3. Construct the **truth table** for a given compound statement.
4. Prove logical equivalence using **truth table**.
5. Find the **dual** of a given logical statement.
6. Express a **compound statement symbolically**.
7. Write symbolic form of statements using **quantifiers**.
8. Verify whether two statements are **logically equivalent**.
9. Simplify a logical expression using **laws of logic**.
10. Solve **switching circuit problems** using logic.

🟢 CHAPTER 2: Matrices

1. Find the **inverse of a matrix** using elementary row transformations.
2. Find the **adjoint of a matrix**.
3. Verify that $A(adj\ A) = |A|I$.
4. Solve a system of equations using **matrix method**.
5. Check whether a given matrix is **singular or non-singular**.
6. Find the **determinant** of a matrix.
7. Prove properties of **inverse of a matrix**.
8. Solve MCQs based on **order, transpose and determinant**.
9. Find inverse of a **diagonal / triangular matrix**.
10. Evaluate matrix expressions.

● CHAPTER 3: Trigonometric Functions

1. Find the **general solution** of trigonometric equations.
2. Find the **principal solutions** of a trigonometric equation.
3. Prove a **trigonometric identity**.
4. Evaluate expressions involving **sin, cos, tan**.
5. Solve equations involving **multiple angles**.
6. Find values of trigonometric ratios using **triangle properties**.
7. Prove identities involving $\tan^{-1}, \sin^{-1}, \cos^{-1}$.
8. Solve equations using **factorization method**.
9. Find solution of equations like $\sin \theta + \sin 3\theta = 0$.
10. Evaluate trigonometric limits.

● CHAPTER 4: Pair of Straight Lines

1. Prove that a **homogeneous equation of degree two** represents a pair of straight lines.
2. Find the **angle between two lines** represented by a second-degree equation.
3. Find the **condition for coincident lines**.
4. Find the **slopes of lines** represented by $ax^2 + 2hxy + by^2 = 0$.
5. Prove that a given equation represents **real and distinct lines**.
6. Find equation of **angle bisectors**.
7. Find the **combined equation** of two straight lines.
8. Prove that equation represents **imaginary lines**.
9. Solve problems based on **pair of lines passing through origin**.
10. MCQs on **conditions of pair of straight lines**.