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**CHAPTER-WISE LIST of MOST IMPORTANT &  
HIGHLY EXPECTED QUESTIONS for Class 12  
Chemistry (Maharashtra Board).**

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Chemistry IMP



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VELOSTRIX  
Aurangabad

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## ● CHAPTER 1: Solid State

1. Define **unit cell** and explain its types.
  2. Derive the **relation between density, molar mass and edge length** of a cubic unit cell.
  3. Calculate number of atoms in **SC, BCC and FCC** unit cells.
  4. What are **point defects**? Explain **Schottky and Frenkel defects**.
  5. What are **F-centres**? Explain colour in NaCl crystal.
  6. Distinguish between **amorphous and crystalline solids**.
  7. Calculate **density of a crystal** given unit cell data.
  8. What is **coordination number**? State it for BCC and FCC.
  9. Explain **packing efficiency** in FCC lattice.
  10. Numerical based on **identification of unit cell**.
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## ● CHAPTER 2: Solutions

1. Define **molality, molarity and mole fraction**.
  2. State and explain **Raoult's law** for non-volatile solute.
  3. Derive expression for **relative lowering of vapour pressure**.
  4. Explain **elevation of boiling point**.
  5. Explain **depression of freezing point**.
  6. Define **osmotic pressure** and derive its equation.
  7. Numerical on **molar mass determination using osmotic pressure**.
  8. What is **Henry's law**? State applications.
  9. Explain **reverse osmosis**.
  10. Numerical based on **freezing point depression**.
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## ● CHAPTER 3: Ionic Equilibria

1. Define **pH** and **pOH**. Derive relation between them.
2. Calculate **pH of strong acid / strong base**.
3. Define **K<sub>a</sub>, K<sub>b</sub> and K<sub>w</sub>**.
4. What is **common ion effect**? Explain with example.
5. Explain **buffer solutions** and their action.
6. Calculate **pH of acidic/basic buffer**.
7. Define **solubility product (K<sub>sp</sub>)**.
8. Numerical based on **K<sub>sp</sub> and solubility**.
9. Explain **hydrolysis of salt of weak acid and strong base**.
10. Calculate **degree of dissociation of weak electrolyte**.

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## ● CHAPTER 4: Chemical Thermodynamics

1. Define **system, surroundings and universe**.
2. Explain **first law of thermodynamics**.
3. Derive expression for **work done in isothermal process**.
4. Define **enthalpy** and explain **enthalpy of reaction**.
5. Explain **Hess's law** with example.
6. Numerical based on **enthalpy change using Hess's law**.
7. Define **entropy** and give examples.
8. Predict sign of **entropy change** for given processes.
9. Define **Gibbs free energy** and explain spontaneity.
10. Numerical on **ΔG calculation**.