

## **JEE Mains Syllabus**

### **Mathematics Syllabus:-**

- ❖ Complex numbers and quadratic equations
- ❖ Matrices and determinants
- ❖ Sets, relations and functions
- ❖ Mathematical induction
- ❖ Permutations and combinations
- ❖ Mathematical reasoning
- ❖ Limit, continuity and differentiability
- ❖ Integral calculus
- ❖ Three-dimensional geometry
- ❖ Differential equations
- ❖ Binomial theorem and its simple applications
- ❖ Sequence and Series
- ❖ Vector algebra
- ❖ Statistics and probability
- ❖ Trigonometry
- ❖ Coordinate geometry

### **Physics Syllabus:-**

#### **Section A**

- ❖ Physics and measurement
- ❖ Rotational motion
- ❖ Thermodynamics
- ❖ Kinematics
- ❖ Work, energy and power
- ❖ Properties of solids and liquids
- ❖ Gravitation
- ❖ Laws of motion
- ❖ Oscillations and waves
- ❖ Electronic devices
- ❖ Kinetic theory of gases
- ❖ Current electricity
- ❖ Communication systems
- ❖ Electromagnetic induction and alternating currents
- ❖ Magnetic effects of current and magnetism
- ❖ Optics
- ❖ Electromagnetic waves
- ❖ Atoms and nuclei
- ❖ Electrostatics
- ❖ Dual nature of matter and radiation

#### **Section B**

- ❖ Experimental Skills

## **Chemistry Syllabus:-**

### **Physical Chemistry**

- ❖ Some basic concepts in chemistry
- ❖ States of matter
- ❖ Atomic structure
- ❖ Chemical bonding and molecular structure
- ❖ Chemical thermodynamics
- ❖ Solutions
- ❖ Equilibrium
- ❖ Redox reactions and electrochemistry
- ❖ Chemical kinetics
- ❖ Surface chemistry

### **Organic Chemistry**

- ❖ Purification and characterisation of organic compounds
- ❖ Hydrocarbons
- ❖ Chemistry in everyday life
- ❖ Principles related to practical chemistry
- ❖ Organic compounds containing halogens
- ❖ Organic compounds containing oxygen
- ❖ Organic compounds containing nitrogen
- ❖ Polymers
- ❖ Some basic principles of organic chemistry
- ❖ Biomolecules

### **Inorganic Chemistry**

- ❖ Classification of elements and periodicity in properties
- ❖ Hydrogen
- ❖ Block elements (alkali and alkaline earth metals)
- ❖ P Block elements group 13 to group 18 elements
- ❖ d- and f - block elements
- ❖ Coordination compounds
- ❖ Environmental chemistry
- ❖ General principles and processes of isolation of metals