# ENGINEERING ASPIRANTS SYLLABUS

# (BATCH 2022-23)

**PHYSICS**

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| **11th** | **12th** |
| Motion in a Straight Line (excluded-Position time  graph, Speed & Velocity) | Electric Charge and Fields (excluded- Uniformly  charged thin spherical shell) |
| Motion in a Plane | Electrostatic Potential and Capacitor |
| Law of Motions ( Newton’s 2nd Law, Momentum & Friction) | Current Electricity (excluded- carbon resistor & colour code, series & parallel combination) |
| Work, Power and Energy | Moving Charges and Magnetism (excluded- cyclotron) |
| Thermodynamics (excluded- heat engine & refrigerator) | Electromagnetic Induction |
| Simple Harmonic Motion | Alternating Current (excluded- power factor & wattles current) |
|  | Ray optics (refraction through curved surfaces, Lens & Lens maker formula) |

**CHEMISTRY**

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| **11th** | **12th** |
| Some Basic Concepts of Chemistry | Solid State (exclude- electrical & magnetic properties ,  semiconductor part) |
| Structure of Atom (excluded- Thomson’s & Rutherford’s Model) | Solution (exclude- abnormal molar mass, Van’t Hoff factor) |
| Classification of Elements and Periodicity | Electrochemistry (exclude- types of cell & law of electrolysis) |
| Chemical Bonding | Chemical Kinetics (exclude- concept of collision theory, activation energy & Arrhenius equation) |
| Gaseous State (exclude- liquefaction of gases, Kinetic energy & Molecular Speed) | The P-Block (exclude- preparation & properties of phosphine, sulphuric acid, oxides of nitrogen, phosphorous, halides & Oxo acids) |
| Basic Concepts of Organics Chemistry (exclude- methods of purification & quantitative analysis) | Coordination compounds (exclude- structure & stereoisomerism) |
|  | Haloalkanes and Haloarenes ( exclude- uses of all compounds) |
|  | Alcohol, Phenol and Ether (exclude- uses with reference to methanol & ethanol) |

**MATHEMATICS (For JEE Aspirants only)**

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| **11th** | **12th** |
| Trigonometry | Relation and Functions (exclude- composite function&  Inverse of function) |
| Complex Number (exclude- Polar representation & square root of complex number) | Matrices (exclude- concept of elementary row & column operation) |
| Quadratic Equation | Determinant (exclude- properties of determinant, no. of solution of linear equation) |
| Permutation and Combination | Continuity and Differentiability (exclude- Rolle’s & lagrange’s MVT) |
| Limits and Derivatives | Application of Derivative (exclude- rate of change of bodies, approximation) |
| Sequence and Series (exclude- formula for special term like sum of k,k2 & k3 | Integration (exclude- definite integrals as limit of sum,  integration of form √𝑎𝑥2 + 𝑏𝑥 + 𝑐)dx |
|  | Application of Integration (area between any of the two above said curves) |
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