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NEST'27
Xylem national entrance cum scholarship test

NEET/JEE IN 2029?

ENTRANCE ORIENTED SCHOOL ൽ
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CLASS 11&12 WITH NEET/JEE



NEST EXAM SYLLABUS - STATE

MATHS

Number System
- Natural Numbers
- Whole Numbers
- Integers
- Rational and Irrational Numbers
- Real Numbers
- Fractions
- Negative Numbers

Types of Angles
- Acute Angle
- Obtuse Angle
- Linear Pairs

Coordinates
- Position and Numbers
- Distance
- Rectangle Problem

Algebra

Polynomials
- Degree of a Polynomial
- Value of a Polynomial at a Given Point
- Graphs of Different Polynomial

Linear Equation in One Variable

Linear Equation in Two Variables
- Solution of a Linear Equation
- Solving System of Equations

Quadratic Equations
- Formation of Quadratic Equations
- Square Completion

Arithmetic Progression
- Sequences and Series
- n^{th} Term of an AP
- Sum to n Terms of an AP

Laws of Exponents

Geometry

Congruence of a Triangle
- SAS (Side-Angle-Side)
- ASA (Angle-Side-Angle)
- AAS (Angle-Angle-Side)
- SSS (Side-Side-Side)
- RHS (Right Angle-Hypotenuse-Side)

Similarity of a Triangle
- AAA/AA (Angle-Angle-Angle or Angle-Angle)
- SAS (Side-Angle-Side Similarity)
- SSS (Side-Side-Side Similarity)

Circles
- Cyclic Quadrilateral
- Central Angle and Opposite Angles
- Angles in a Semi Circle is Right

Mensuration
- Length of an Arc
- Perimeter and Area of Sector and Segments
- Area of Trapezium
- Area of Parallelogram
- Area and Volume of Cuboid, Cube, Cylinder, Hollow Cylinders
- Surface area and Volumes of a Combination of Solids

Trigonometry
- Trigonometric Ratios
- Trigonometric Ratios of Some Specific Angles ($30^\circ - 60^\circ - 90^\circ, 45^\circ - 45^\circ - 90^\circ$)
- Area of Triangle and Parellellogram
- 2r sin A, 2r sin B, 2r sin C
- Angle of Elevation and Angle of Depression

Statistics and Probability
- Mean of Grouped, Ungrouped Data
- Basics of Probability
  Geometrical Probability
  Sum of Total Probability = 1
- Probability in Pairs

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CHEMISTRY

Structure of Atom
- Atoms
- Dalton's atomic theory
- Subatomic particles
- Types of atom models
- Bohr model
- Quantum numbers
- Subshell electronic configurations.

Properties of Matter
- States of matter
- Change of state
- Diffusion
- Mixtures and their types
- Pure substances.

Laws of Gases
- Properties of gases
- Boyle's law
- Charles's law
- Avogadro's law
- Combined gas equation
- Ideal gas equation.

Metals
- Physical and chemical properties
- Reactions of metals with air, Water, acids and bases
- Uses of metals.

Nonmetals
- Oxygen,Nitrogen, Chlorine and hydrogen - uses, Preparation and properties.

Redox Reactions
- Oxidation
- Reduction
- Displacement reactions.

Acids, Bases and Salts
- General properties
- Chemical properties
- pH
- Salts.

Polymers
- Fibre
- Synthetic fibres
- Plastics.

Organic Chemistry
- Basics of hydrocarbons
- Naming
- Functional Groups
- Chemical reactions - Substitution, Addition, Polymerization (condensation,addition), Thermal cracking and combustion.

Periodic Classification
- History of mendeleev, Moseley Lavoisier, Dobereiner and newlands
- Periodic table
- Trends in the periodic table
- Atomic size
- Valency
- metallic and non-metallic character
- periodic table and subshell electronic configurations
- characteristics of s-, p-, d- and f-block elements.

Chemical Bonding
- Octet rule
- Ionic bond
- Covalent bond
- Polar nature
- Electronegativity
- Chemical formulae.

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PHYSICS

Sound Waves
- Amplitude
- Frequency
- Resonance
- Longitudinal Waves
- Transverse Waves
- Characteristics of Wave
- Reaction of Sound
- Echo
- Lmits of Audibility.

Lenses
- Types of Lenses
- Terms Related To Lens
- Image Formation of Convex And Concave Lens
- Lenses Formula
- Magnification
- Power of Lens
- Compound Microscope
- Telescope

Refraction of Light
- Refraction
- Optical Density
- Refractive Index
- Laws of Refraction
- Total Internal Reflection

Equations of Motion
- Displacement
- Velocity (Uniform / Non Uniform)
- Acceleration (Uniform / Non Uniform)
- Position-Time Graph
- Velocity-Time Graph

Laws of Motion
- Resultant Force
- External Force
- Internal Force
- Galileos Observations
- Mass And Inertia
- Momentum
- Rate of Change of Momentum
- Newtons Laws of Motion (1st, 2nd And 3rd)

Gravitation
- Universal Law of Gravitation
- Acceleration Due To Gravity
- Mass And Weight
- Free Fall
- Circular Motion

Buoyant Force
- Buoyant Force
- Factors Influencing Buoyant Force
- Archimedes Principle
- Principle of Floatation
- Relative, Density
- Hydrometer
- Lactometer

Work And Energy
- Work
- Negative Work
- Energy
- Potential Energy
- Kinetic Energy
- Law of Conservation of Energy
- Power

Electric Current
- Potential Difference
- Combination of Cell
- Intensity of Electric Current
- Ohm’ s Law
- Resistor
- Rheostat
- Arrangement of Resistor.

Sound
- Sound
- Propagation of Sound
- Speed of Sound
- Music And Noise

Vision And World of Colours
- Dispersion of Light
- Rainbow
- Primary And Secondary Colours
- Persistence of Vision
- Colour of Transparent Objects
- Colour of Opaque Objects
- Scattering of Light
- Tyndall Effect
- Blue Colour of Sky
- Colour of Setting And Rising of Sun
- Eye And Vision
- Defect of Eye
- Light Pollution

Magnetic Effects of Electric Current
- Current Carrying Conductor And Magnetic Field
- Right Hand Thunb Rule
- Solenoid
- Electric Motor
- Fleming's Left Hand Rule
- Moving Coil Loudspeaker

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BIOLOGY

Cell Biology (Cytology)

- Prokaryotic and Eukaryotic Cells

Cell Organelles

- Endoplasmic Reticulum (ER)
- Golgi
- Bodies
- Mitochondria
- Ribosomes
- Lysosomes
- Nucleus
- Vacuole

Histology (Tissues)

- Plant Tissues
- Animal Tissues

Physiology

Photosynthesis

- Light Reaction
- Dark Reaction

Respiration

- Aerobic & Anaerobic Respiration
- Glycolysis
- Krebs Cycle

Respiration

- Aerobic & Anaerobic Respiration
- Glycolysis
- Krebs Cycle

Excretion

- Importance
- Human Excretory System
- Nephron & Urine Formation
- Hemodialysis
- Excretion in Plants

Nervous System

Neuron

- Structure & Function
- Brain: Parts & Functions

Reproduction

- Human Reproductive System
- Flower: Structure

Molecular Biology

- DNA Structure
- RNA Structure
- Nucleotide
- Protein Synthesis

Genetics

- Monohybrid Cross
- Dihybrid Cross

Taxonomy and Systematics

- Classification of Plants & Animals
- Five Kingdom Classification
- Binomial Nomenclature

Ecology and Environment

- Ecosystem
- Food Chain
- Food Web
- Ecological Interactions

Sense Organs

- Eye
- Ear
- Nose
- Tongue
- Skin

Endocrine system

- Glands & Hormones

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WIN & GET UP TO 100% SCHOLARSHIP!

ATTEND THE NEST EXAM

29 NOVEMBER 2026

3:00 PM - 4:30 PM

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