



NDA Syllabus 2027 and Exam Pattern: Guide to Kickstart Your Prep

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Do you want to join [National Defence Academy](#) and serve your nation as an officer in the Indian armed forces? If yes, mastering the official **NDA Syllabus** is your primary step to cracking the national-level entrance exam. At THE LUCKNOW CLASSES, we track and provide the most accurate updates for passionate defense aspirants. We structure our digital informational guides to map exactly with the latest UPSC testing standards.

To win any highly competitive battle, you must study your battlefield map carefully. This descriptive guide details every single topic and sub-topic from the official document. Read on to master the updated NDA Exam Pattern and the official NDA marking scheme to build your strategy.

Complete Overview of the Official NDA Exam Pattern

The [Union Public Service Commission](#) (UPSC) administers the national selection test twice every year. The written exam consists of two mandatory papers conducted on a single day.

Here is the exact layout of the **NDA Exam Pattern** for the comprehensive written stage:

Paper Code	Core Subjects	Number of Questions	Maximum Marks	Test Duration
Paper 1	Mathematics	120 Questions	300 Marks	2.5 Hours
Paper 2	General Ability Test (GAT)	150 Questions	600 Marks	2.5 Hours
Total	Written Examination	270 Questions	900 Marks	5.0 Hours

After qualifying the written cutoff, you will receive a call for the SSB Interview stage. The Services Selection Board evaluates your personality, intelligence, and officer-like traits for another 900 marks. Your final rank depends strictly on your cumulative performance across both distinct phases.

Detailed Breakdown of the NDA Marking Scheme

Understanding the official **NDA marking scheme** prevents you from accumulating negative marks during the exam. UPSC penalizes wrong options heavily to evaluate your accuracy levels under pressure.

- **Mathematics Paper Guidelines:** You get +2.5 marks for every correct choice. You lose 0.83 marks for every incorrect answer.
- **General Ability Test Guidelines:** You earn +4 marks for every correct answer. You lose 1.33 marks for every incorrect answer.

UPSC deducts exactly one-third of the assigned marks for every wrong response. No marks are deducted for leaving a question blank. At THE LUCKNOW CLASSES, we teach students smart elimination methods to tackle this strict **NDA marking scheme** safely.

Exhaustive Topic-Wise NDA Entrance Exam Syllabus

Let us examine every minor subject and chapter listed in the official **NDA Entrance Exam Syllabus** layout. As all of you know that there are two written test in NDA.

Paper 1: Mathematics (300 Marks)

The mathematics section evaluates your conceptual depth and mathematical calculations. The entire **NDA Syllabus** for math focuses deeply on concepts from Class 11 and Class 12. It is divided in 8 Units.

1. Algebra:

Concept of set, operations on sets, Venn diagrams. De Morgan laws, Cartesian product, relation, equivalence relation. Representation of real numbers on a line. Complex numbers— basic properties, modulus, argument, cube roots of unity. Binary system of numbers. Conversion of a number in decimal system to binary system and vice-versa. Arithmetic, Geometric and Harmonic progressions. Quadratic equations with real coefficients. Solution of linear inequations of two variables by graphs. Permutation and Combination. Binomial theorem and its applications. Logarithms and their applications.

2. Matrices and Determinants:

Types of matrices, operations on matrices. Determinant of a matrix, basic properties of determinants. Adjoint and inverse of a square matrix, Applications—Solution of a system of linear equations in two or three unknowns by Cramer's rule and by Matrix Method.

3. Trigonometry:

Angles and their measures in degrees and in radians. Trigonometrical ratios. Trigonometric identities Sum and difference formulae. Multiple and Sub-multiple angles. Inverse trigonometric functions. Applications—Height and distance, properties of triangles.

4. Analytical Geometry of 2 and 3 Dimensions:

Rectangular Cartesian Coordinate system. Distance formula. Equation of a line in various forms. Angle between two lines. Distance of a point from a line. Equation of a circle in standard and in general form. Standard forms of parabola, ellipse and hyperbola. Eccentricity and axis of a conic. Point in a three dimensional space, distance between two points. Direction Cosines and direction ratios. Equation two points. Direction Cosines and direction ratios. Equation of a plane and a line in various forms. Angle between two lines and angle between two planes. Equation of a sphere.

5. Differential Calculus:

Concept of a real valued function—domain, range and graph of a function. Composite functions, one to one, onto and inverse functions. Notion of limit, Standard limits—examples. Continuity of functions—examples, algebraic operations on continuous functions. Derivative of function at a point, geometrical and physical interpretation of a derivative—applications. Derivatives of sum, product and quotient of functions, derivative of a function with respect to another function, derivative of a composite function. Second order derivatives. Increasing and decreasing functions. Application of derivatives in problems of maxima and minima.

6. Integral Calculus and Differential Equations:

Integration as inverse of differentiation, integration by substitution and by parts, standard integrals involving algebraic expressions, trigonometric, exponential and hyperbolic functions. Evaluation of definite integrals—determination of areas of plane regions bounded by curves—applications.

Definition of order and degree of a differential equation, formation of a differential equation by examples. General and particular solution of a differential equations, solution of first order and first degree differential equations of various types—examples. Application in problems of growth and decay.

7. Vector Algebra:

Vectors in two and three dimensions, magnitude and direction of a vector. Unit and null vectors, addition of vectors, scalar multiplication of a vector, scalar product or dot product of two vectors. Vector product or cross product of two vectors. Applications—work done by a force and moment of a force and in geometrical problems.

8. STATISTICS AND PROBABILITY:

Statistics: Classification of data, Frequency distribution, cumulative frequency distribution— examples. Graphical representation— Histogram, Pie Chart, frequency polygon— examples. Measures of Central tendency— Mean, median and mode. Variance and standard deviation— determination and comparison. Correlation and regression.

Probability: Random experiment, outcomes and associated sample space, events, mutually exclusive and exhaustive events, impossible and certain events. Union and Intersection of events. Complementary, elementary and composite events. Definition of probability—classical and statistical—examples. Elementary theorems on probability—simple problems. Conditional probability, Bayes' theorem—simple problems. Random variable as function on a sample space. Binomial distribution, examples of random experiments giving rise to Binominal distribution.

Paper 2: General Ability Test (600 Marks)

The General Ability Test is the highest-scoring section of the **NDA Entrance Exam Syllabus**. It tests your linguistic skills, scientific awareness, and social knowledge.

Part A: English Syllabus (200 Marks)

This section contains 50 questions to test your working proficiency in English. It focuses on:

- Grammar and usage rules.
- Vocabulary testing via Synonyms and Antonyms.
- Comprehension passages.
- Cohesion in extended texts, idioms, phrases, and sentence ordering.

Part B: General Knowledge Syllabus (400 Marks)

The General Knowledge division contains six structured sections. Each section carries a specific weightage under the official guidelines.

1: Physics (25% Weightage)

- Physical properties and states of matter, mass, weight, volume, density, specific gravity.
- Archimedes principle, pressure, barometer.
- Motion, velocity, acceleration, Newton's laws of motion, force, momentum, parallelogram of forces.
- Stability, equilibrium of bodies, gravitation, work, power, energy.
- Effects of heat, temperature measurement, change of state, latent heat, heat transference modes.
- Sound waves, wave properties, simple musical instruments.
- Rectilinear propagation of light, reflection, refraction, spherical mirrors, lenses, human eye.
- Natural, artificial magnets, magnetic properties, Earth as a magnet.
- Static, current electricity, conductors, non-conductors, Ohm's law, electrical circuits, heating, lighting, magnetic effects.
- Electrical power measurement, primary, secondary cells, X-rays use.
- Working principles of: Simple pendulum, pulleys, siphon, levers, balloon, pumps, hydrometer, pressure cooker, thermos flask, gramophone, telegraph, telephone, periscope, telescope, microscope, mariner's compass, lightning conductors, safety fuses.

2: Chemistry (15% Weightage)

- Physical and chemical changes, elements, mixtures, compounds, symbols, formulae, simple chemical equations.
- Laws of chemical combination (excluding numerical problems), properties of air and water.
- Preparation and properties of Hydrogen, Oxygen, Nitrogen, Carbon Dioxide.
- Oxidation and reduction processes, acids, bases, salts.

- Different forms of carbon.
- Natural and artificial fertilizers.
- Materials for producing soap, glass, ink, paper, cement, paints, safety matches, gunpowder.
- Atomic structure, atomic weight, equivalent weight, molecular weight, valency.

3: General Science (10% Weightage)

- Differences between living and non-living things.
- Basis of life: cells, protoplasts, tissues.
- Growth and reproduction systems in plants and animals.
- Elementary knowledge of the human body and its vital organs.
- Common epidemics, their specific causes, and prevention methods.
- Food as a source of energy, constituents of food, balanced diet.
- Solar system components: meteors, comets, eclipses.
- Major achievements of eminent scientists.

4: History & Freedom Movement (20% Weightage)

- Broad survey of Indian history, culture, and ancient civilizations.
- Freedom movement in India.
- Elementary study of the Indian Constitution and administrative machinery.
- Five-Year Plans of India, Panchayati Raj, cooperatives, community development.
- Bhoodan, Sarvodaya, National Integration, Welfare State, teachings of Mahatma Gandhi.
- Modern world forces: Renaissance, exploration, discovery, War of American Independence.
- French Revolution, Industrial Revolution, Russian Revolution.
- Impact of science and technology on modern society.
- Concepts of One World, United Nations, Panchsheel, Democracy, Socialism, Communism.

- Role of India in the modern world.

5: Geography (20% Weightage)

- The Earth: shape, size, latitudes, longitudes, concept of time, International Date Line.
- Movements of Earth and their seasonal effects, origin of Earth.
- Rocks and their classification, mechanical and chemical weathering, earthquakes, volcanoes.
- Ocean currents and tides.
- Atmosphere composition, temperature, atmospheric pressure, planetary winds, cyclones, anti-cyclones.
- Humidity, condensation, precipitation, types of climate, major natural regions of the world.
- Regional geography of India: climate, natural vegetation, mineral and power resources.
- Location and distribution of Indian agricultural and industrial activities.
- Important seaports, main sea, land, and air routes of India.
- Main items of imports and exports of India.

6: Current Events (10% Weightage)

- Knowledge of important events that happened in India recently.
- Current important global events.
- Prominent Indian and international personalities, including cultural leaders and sports stars.

Smart Preparation Blueprint for NDA Aspirants

Succeeding in the UPSC NDA test requires consistent efforts and regular, targeted mock practice.

1. **Analyze Weightage Carefully:** Allocate your study hours according to the official GK weightage distribution. Give extra attention to Physics

and History sections.

2. **Build Math Speed:** Solve 30 math problems daily to build your calculation velocity. Speed helps you handle 120 math questions efficiently.
3. **Maintain Regular Revision Notes:** Create short notebooks for formulas and historical dates. Regular weekly revisions help retain complex factual details.
4. **Take Mock Tests Frequently:** Attempt complete online and offline mock tests. Check your speed against the actual 2.5-hour duration.

Accelerate Your Journey with THE LUCKNOW CLASSES

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We publish free informational guides, topic overviews, and structure breakdowns online. Our articles explain the official **NDA Syllabus and Exam Pattern** clearly to reduce your test anxiety. We also share valuable guidance on physical standards and SSB selection procedures. Trust THE LUCKNOW CLASSES to get reliable insights for your defense career journey. Let us build your path to glory together!

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