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with Tips to crack
NDA/NA Exam in
the first attempt

5

**Exam
Analysis**

with Last 5 Years'
Chapter-wise
Trend Analysis

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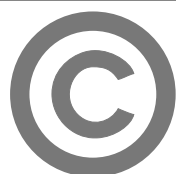
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**SYLLABUS
COVERED**

NDA/NA



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PREFACE

“We fight to win and win with a knockout because there are no runners up in war.”

— General JJ Singh

The National Defence Academy is an iconic institution and hallmark of global excellence in the sphere of military education. Over the years it has emerged as a unique military academy, attracting the best of youth from our nation and also from friendly foreign countries and transforming them into officers and gentlemen.

National Defence Academy or NDA exam is conducted twice a year by Union Public Service Commission for admission to the Army, Navy, and Air Force wings of NDA and Indian Naval Academy Course (INAC).

In 2023, 4.5 Lacs students applied for the NDA examination, the opportunity you get from the Indian Armed Forces is just limitless, which helps in enhancing your personality traits. For a youngster who is aspiring to get a job full of challenges and excitement, then there is no better job than the defence.

This book aims to make aspirants exam-ready, boost their confidence and help them achieve better results in NDA. By making learning Simple, we are also making better careers and a better life for every student. Every day we are moving ahead pursuing our noble cause of spreading knowledge.

This set of solved question papers is designed to enrich students with ample and exam-oriented practice so that they can clear NDA examinations with extraordinary results. Not one or two but 12 Previous Year Solved Question Paper (2017 to 2023) to focus on polishing every topic. Thorough studying of this book will boost my confidence and familiarise me with exam patterns.

Some benefits of studying from Oswaal NDA 12 Previous year solved question papers:

1. **100% updated** with Fully Solved Paper of April & September 2023.
2. **Concept Clarity** with detailed explanations of 2017 (I) to 2023 Papers.
3. **Extensive Practice** with 1200+ Questions and Two Sample Question Papers.
4. **Crisp Revision** with Mind Maps.
5. **Expert Tips** helps you get expert knowledge master & crack NDA/NA in first attempt.
7. **Exam insights** with 5 Year-wise (2023-2019) Trend Analysis, empowering students to be 100% exam ready.

Our Heartfelt Gratitude

Finally, we would like to thank our authors, editors, and reviewers. Special thanks to our students who send us suggestions and constantly help improve our books. To stay true to our motto of ‘Learning Made Simple’, we constantly strive to present information in ways that are easy to understand as well as remember.

Wish you all Happy Learning!

All the Best!!
TEAM OSWAAL

I realize what I cannot Control and let the good things flow

I courageously move in the direction of my dreams

I am Supported fully by the universe

I am wrapped in the loving energy of the universe

I allow my desires to flow to me now

All of my thoughts are aligned with my desires

Affirmations for the new "YOU"

I effortlessly attract my desires

// Accept yourself, love yourself, and keep moving forward. If you want to fly, you have to give up what weighs you down.

I am open to new experiences and welcome abundance into my life

When I let go, I create space for something better.

// I have the power to shift my mindset and see the good in everything.



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Tips to Crack NDA in the First Attempt

The NDA Exam is conducted by the Union Public Service Commission or UPSC for candidates who want to join Army, Navy & Airforce Wing of National Defence Academy/Naval Academy, NDA is recognised as one of the reputed National level Examinations in India. Cracking the NDA/NA Exam in the very first attempt, given the difficulty level, can be a laborious task but is quite attainable if done diligently as well as smartly. Here are some tips that you must follow by heart to crack the exam in the very first attempt:

1 Think Right

Calming yourself and thinking positive is the first and the best course of action that one is required to take. Think and believe that the exam goal is achievable if worked upon smartly.

2

Start studying from the beginning

All the aspirants are aware of how vast, comprehensive and detailed the syllabus of the NDA exam is. To crack the exam in the first attempt you have to start preparing for the exam from the beginning of your 12th class. It is only then that you will be able to complete the entire syllabus. Following this approach will also allow you plenty of time to revise.

3

Respect the syllabus and arrange the materials accordingly

While preparing for the NDA exam nothing can be labelled as less important. Questions can come from the most unexpected topics too. Laying down your whole syllabus in front of you will help you to decide on the study material you require.

4

Get the right tools and study material

Gathering and preparing from the appropriate study material is something you cannot be ignorant towards. You can refer to Oswaal Books NDA/NA Year-Wise 12 Solved Papers along with Question Banks to enhance your preparation. Both the reference books are on the lines of the current syllabus and can be entrusted upon before the examination.

5

Schedule total time for each subject

Creating a schedule which gives due time to all the subjects is a must. Giving proper time to all the subjects daily will help you cover the syllabus on time, giving you enough time for revision.

6

Understand the concepts

No one can crack the NDA/NA exam just by mugging up all the concepts and topics. The syllabus of the exam is in-depth such that you need to understand every concept.

7

Practice a lot of Sample Papers

Year-wise Solved Papers will not only help you in understanding the examination pattern, but they will also help you in figuring out the questions that come up every year and this might give you an edge over other students. You can refer to Oswaal NDA/NA Question Bank, as they include all the typologies of Questions asked in the Examination, Previous Years Papers with solutions, Mind Maps, etc. Referring to various sample papers might also help you in comprehending the areas which require more work.

8

Revise whenever you get time

Make sure you revise as much as possible. The revision will help you in keeping the concepts fresh in your mind.

9

Analysing your performance

While you are solving papers, make sure you keep a track of time i.e. how much time does it take to solve one section or one question? Make a report of the sections and type of questions which take minimum and maximum time.



Syllabus

PAPER-II GENERAL ABILITY SYLLABUS

The general ability section comprises of **two parts** which are mentioned below:

Part – A

English: The English syllabus covers the topics like vocabulary, Grammar and usage, comprehension and cohesion in extended text to test the candidate's proficiency in English.

Part – B

General Knowledge: The question paper comprises of general knowledge and covers the subjects that include Physics, Chemistry, Social Studies, General Science, Geography and Current Events.

Section A – Physics

Motion of objects, Newton's Laws of Motion, Force and Momentum, Parallelogram of Forces, Stability and Equilibrium of bodies, Gravitation, elementary ideas of work, Velocity and Acceleration, Power and Energy, Sound waves and their properties, Simple musical instruments, Natural and Artificial Magnets, Properties of a Magnet, Earth as a Magnet, Siphon, Levers, Balloon, Pumps, Hydrometer, Pressure Cooker, Thermos Flask, Gramophone, Telegraphs, Telephone, Periscope, Telescope, Microscope, Mariner's Compass; Lightening Conductors, Safety Fuses, Simple Pendulum.

Simple Pulleys, Physical Properties and States of Matter, Mass, Weight, Volume, Density and Specific Gravity, Principle of Archimedes, Pressure Barometer, Effects of Heat, change of State and Latent Heat, Modes of transference of Heat, Rectilinear propagation of Light, Reflection and refraction. Spherical mirrors and Lenses. Human Eye, Static and Current Electricity, Measurement of temperature and heat, conductors and Non-conductors, Ohm's Law, Simple Electrical Circuits, Heating, Lighting and Magnetic effects of Current, Measurement of Electrical Power, Primary and Secondary Cells, Use of X-Rays.

Section B – Chemistry

Preparation and Properties of Hydrogen, Oxygen, Nitrogen and Carbon-Di-oxide, Oxidation and Reduction, Material used in the preparation of substances like soap, Glass, Ink, Paper, Cement, Paints, Safety Matches, and Gun-Powder, Carbon – different forms, Physical and Chemical changes. Symbols, Formulas and simple Chemical Equations, Law of Chemical Combination (excluding problems). Properties of Air and Water, Acids, bases and salts, Elements, Mixtures and Compounds, Fertilizers – Natural and Artificial, Elementary ideas about the Structure of Atom, Atomic, Equivalent and Molecular Weights, Valency.

Section C – General Science

Basis of Life – Cells, Protoplasm and Tissues, Constituents of food, Balanced Diet, Achievements of Eminent Scientists, Difference between the living and non-living, Elementary knowledge of human Body and its important organs, Food – Source of Energy for man, Growth and Reproduction in Plants and Animals, Common Epidemics, their causes and prevention, The Solar System – Meteors and Comets, Eclipses.

Section D – History

Freedom Movement in India, Bhootan, Sarvodaya, National Integration and Welfare State, Basic Teachings of Mahatma Gandhi, A broad survey of Indian History, with emphasis on Culture and Civilisation, Elementary knowledge of Five Year Plans of India, Elementary study of Indian Constitution and

Administration, Panchayati Raj, Forces shaping the modern world; Renaissance, Exploration and Discovery; War of American Independence, French Revolution, Industrial Revolution and Russian Revolution, Impact of Science and Technology on Society, Concept of one World, United Nations, Panchsheel, Democracy, Socialism and Communism, Co-operatives and Community Development, Role of India in the present world.

Section E – Geography

Origin of Earth, Weathering – Mechanical and Chemical, Earthquakes and volcanoes, Atmosphere and its composition, Temperature and Atmospheric Pressure, Rocks and their classification, Planetary Winds, cyclones and Anti-cyclones, Humidity, Condensation and Precipitation, Major Natural regions of the World, Important Sea ports and main sea, land and air routes of India. Main items of Imports and Exports of India, Types of Climate, The Earth, its shape and size, Latitudes and Longitudes, Concept of time, International Date Line, Movements of Earth and their effects, Ocean Currents and Tides, Regional Geography of India – Climate, Natural vegetation. Mineral and Power resources, location and distribution of agricultural and industrial activities.

Section F – Current Events

Current important world events, Knowledge of Important events that have happened in India in the recent years, prominent personalities – both Indian and International including those connected with cultural activities and sports.

□□□

Scheme of Examination

1. The subjects of the written examination, the time allowed and the maximum marks allotted to each subject will be as follows:—

Subject	Code	Duration	Maximum Marks
Mathematics	01	2½ Hours	300
General Ability Test	02	2½ Hours	600
Total			900
SSB Test/Interview:			900

2. THE PAPERS IN ALL THE SUBJECTS WILL CONSIST OF OBJECTIVE TYPE QUESTIONS ONLY. THE QUESTION PAPERS (TEST BOOKLETS) OF MATHEMATICS AND PART “B” OF GENERAL ABILITY TEST WILL BE SET BILINGUALLY IN HINDI AS WELL AS ENGLISH.
3. In the question papers, wherever necessary, questions involving the metric system of Weights and Measures only will be set.
4. Candidates must write the papers in their own hand. In no circumstances will they be allowed the help of a scribe to write answers for them.
5. The Commission have discretion to fix qualifying marks in any or all the subjects at the examination.
6. The candidates are not permitted to use calculator or Mathematical or logarithmic table for answering objective type papers (Test Booklets). They should not therefore, bring the same inside the Examination Hall.

Height and Weight Standards

For Female Candidates joining NDA (Army):

Age (yrs)	Minimum weight for all ages	Age: 17 to 20 yrs	Age: 20 + 01 day - 30 yrs	Age : 30 + 01 Day - 40 yrs	Age: Above 40 yrs
Height (cm)	Weight (kg)	Weight (kg)	Weight (kg)	Weight (kg)	Weight (kg)
140	35.3	43.1	45.1	47.0	49.0
141	35.8	43.7	45.7	47.7	49.7
142	36.3	44.4	46.4	48.4	50.4
143	36.8	45.0	47.0	49.1	51.1
144	37.3	45.6	47.7	49.8	51.8
145	37.8	46.3	48.4	50.5	52.6
146	38.4	46.9	49.0	51.2	53.3
147	38.9	47.5	49.7	51.9	54.0
148	39.4	48.2	50.4	52.6	54.8
149	40.0	48.8	51.1	53.3	55.5
150	40.5	49.5	51.8	54.0	56.3
151	41.0	50.2	52.4	54.7	57.0
152	41.6	50.8	53.1	55.4	57.8
153	42.1	51.5	53.8	56.2	58.5
154	42.7	52.2	54.5	56.9	59.3
155	43.2	52.9	55.3	57.7	60.1
156	43.8	53.5	56.0	58.4	60.8
157	44.4	54.2	56.7	59.2	61.6
158	44.9	54.9	57.4	59.9	62.4
159	45.5	55.6	58.1	60.7	63.2
160	46.1	56.3	58.9	61.4	64.0
161	46.7	57.0	59.6	62.2	64.8
162	47.2	57.7	60.4	63.0	65.6
163	47.8	58.5	61.1	63.8	66.4

...CONTD.

For Male Candidates joining NDA (Army):

Height requirement varies as per the stream of entry. Weight should be proportionate to height as per the chart given below:-

Age (yrs)	Minimum weight for all ages	Age: 17 to 20 yrs	Age: 20 + 01 day - 30 yrs	Age : 30 + 01 Day - 40 yrs	Age: Above 40 yrs
Height (cm)	Weight (kg)	Weight (kg)	Weight (kg)	Weight (kg)	Weight (kg)
140	35.3	43.1	45.1	47.0	49.0
141	35.8	43.7	45.7	47.7	49.7
142	36.3	44.4	46.4	48.4	50.4
143	36.8	45.0	47.0	49.1	51.1
144	37.3	45.6	47.7	49.8	51.8
145	37.8	46.3	48.4	50.5	52.6
146	38.4	46.9	49.0	51.2	53.3
147	38.9	47.5	49.7	51.9	54.0
148	39.4	48.2	50.4	52.6	54.8
149	40.0	48.8	51.1	53.3	55.5
150	40.5	49.5	51.8	54.0	56.3
151	41.0	50.2	52.4	54.7	57.0
152	41.6	50.8	53.1	55.4	57.8
153	42.1	51.5	53.8	56.2	58.5
154	42.7	52.2	54.5	56.9	59.3
155	43.2	52.9	55.3	57.7	60.1
156	43.8	53.5	56.0	58.4	60.8
157	44.4	54.2	56.7	59.2	61.6
158	44.9	54.9	57.4	59.9	62.4
159	45.5	55.6	58.1	60.7	63.2
160	46.1	56.3	58.9	61.4	64.0
161	46.7	57.0	59.6	62.2	64.8
162	47.2	57.7	60.4	63.0	65.6
163	47.8	58.5	61.1	63.8	66.4
164	48.4	59.2	61.9	64.6	67.2
165	49.0	59.9	62.6	65.3	68.1
166	49.6	60.6	63.4	66.1	68.9
167	50.2	61.4	64.1	66.9	69.7
168	50.8	62.1	64.9	67.7	70.6
169	51.4	62.8	65.7	68.5	71.4
170	52.0	63.6	66.5	69.4	72.3
171	52.6	64.3	67.3	70.2	73.1
172	53.3	65.1	68.0	71.0	74.0
173	53.9	65.8	68.8	71.8	74.8
174	54.5	66.6	69.6	72.7	75.7

...CONTD.

Age (yrs)	Minimum weight for all ages	Age: 17 to 20 yrs	Age: 20 + 01 day - 30 yrs	Age : 30 + 01 Day - 40 yrs	Age: Above 40 yrs
Height (cm)	Weight (kg)	Weight (kg)	Weight (kg)	Weight (kg)	Weight (kg)
175	55.1	67.4	70.4	73.5	76.6
176	55.8	68.1	71.2	74.3	77.4
177	56.4	68.9	72.1	75.2	78.3
178	57.0	69.7	72.9	76.0	79.2
179	57.7	70.5	73.7	76.9	80.1
180	58.3	71.3	74.5	77.8	81.0
181	59.0	72.1	75.4	78.6	81.9
182	59.6	72.9	76.2	79.5	82.8
183	60.3	73.7	77.0	80.4	83.7
184	60.9	74.5	77.9	81.3	84.6
185	61.6	75.3	78.7	82.1	85.6
186	62.3	76.1	79.6	83.0	86.5
187	62.9	76.9	80.4	83.9	87.4
188	63.6	77.8	81.3	84.8	88.4
189	64.3	78.6	82.2	85.7	89.3
190	65.0	79.4	83.0	86.6	90.3
191	65.7	80.3	83.9	87.6	91.2
192	66.4	81.1	84.8	88.5	92.2
193	67.0	81.9	85.7	89.4	93.1
194	67.7	82.8	86.6	90.3	94.1
195	68.4	83.7	87.5	91.3	95.1
196	69.1	84.5	88.4	92.2	96.0
197	69.9	85.4	89.3	93.1	97.0
198	70.6	86.2	90.2	94.1	98.0
199	71.3	87.1	91.1	95.0	99.0
200	72.0	88.0	92.0	96.0	100.0
201	72.7	88.9	92.9	97.0	101.0
202	73.4	89.8	93.8	97.9	102.0
203	74.2	90.7	94.8	98.9	103.0
204	74.9	91.6	95.7	99.9	104.0
205	75.6	92.5	96.7	100.9	105.1
206	76.4	93.4	97.6	101.8	106.1
207	77.1	94.3	98.6	102.8	107.1
208	77.9	95.2	99.5	103.8	108.2
209	78.6	96.1	100.5	104.8	109.2
210	79.4	97.0	101.4	105.8	110.3

NDA vs CDS: Know All the Similarities & Differences

The National Defence Academy (NDA) and the Combined Defence Services (CDS) Exams are gateways to the Indian Armed Forces. Though both the exams are conducted by the Union Public Service Commission, i.e. UPSC, there are many similarities and differences in the recruitment, training, salary, perks and promotion opportunities, etc.

For those who are planning to join Indian Army, Navy or Air Force, it is essential to know the differences and similarities in NDA and CDS. The similarities are given below:

Parameter	NDA	CDS
Age	16.5-19.5 Years	19-25 Years
Eligibility	Men only	Men & Women
Educational Qualification	10+2	Degree
Scheme of Examination	Written + SSB	Written + SSB
Frequency of the Exam	Twice/Year	Twice/Year
Duration of Training	4-4.5 Years 3 Yrs. at NDA and 1 Yr. at IMA (For Army cadets) 3 Yrs. at NDA and 1 Yr. at Naval Academy (For Naval cadets)/ 3 Yrs. at NDA and 1 & 1/2 Yrs. at AFA Hyderabad (For AF cadets)	18 months for IMA Cadets 37-40 months for Navy Officers 74 months for Air Force Officers
Training Centres	National Defence Academy, Khadakwasla, Pune Indian Military Academy, Dehradun Indian Naval Academy, Ezhimala Indian Air Force Academy, Hyderabad	Indian Military Academy (IMA), Dehradun for Army Cadets Indian Naval Academy, Ezhimala for Navy Cadets Indian Air Force Academy, Hyderabad for Air Force Officers Officers Training Academy (OTA), Chennai
Degrees awarded	Army Cadets - B.Sc./B.Sc. (Computer)/BA /B.Tech. degree Naval Cadets - B.Tech. degree Air Force Cadets - B.Tech. degree	Army Cadets in IMA - PG Diploma in 'Military and Defence Management OTA Chennai – Post Graduate Diploma in Defence Management and Strategic Studies
Rank assigned after training	Lieutenant	Lieutenant
Stipend during training	Rs. 21,000/- p.m. (fixed)	Rs. 21,000/- p.m. (fixed)

Promotional Avenues

Rank	Min. Commissioned Service for Promotion	
	NDA Officer	CDS Officer
Lieutenant	On Commission	On Commission
Captain	02 Years	02 Years
Major	06 years	06 years
Lieutenant Colonel	13 years	13 years
Colonel(Selection)	15 years	15 years
Colonel (Time Scale)	26 years	26 years
Brigadier	On Selection	23 years
Major General	On Selection	25 years
Lieutenant General	On Selection	28 years
General	On Selection	No restrictions

□□□

Trend Analysis (2023-2019)

Subjects	No. of Questions in					
	2023	2022	2021	2021	2020	2019
	I	I	I	II	I	I
Physics	22	25	21	23	25	23
Chemistry	19	15	18	15	17	18
General Science	9	10	12	12	4	10
History	18	17	20	19	15	19
Geography	17	15	14	16	13	11
Current Events	15	18	15	15	26	19
Total	100	100	100	100	100	100

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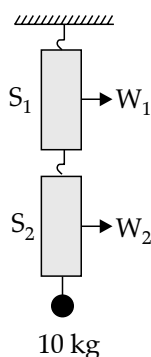
Time : 1 hr. 40 min.

Total Marks : 400

Instructions :

1. This Test Booklet contains **100** items (questions). Each item comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose **ONLY ONE** response for each item.
2. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See directions in the Answer Sheet.
3. All items carry equal marks.
4. **Penalty for wrong answers :**
THERE WILL BE PENALTY FOR WRONG ANSWERS MARKED BY A CANDIDATE IN THE OBJECTIVE TYPE QUESTION PAPERS.
 - (i) There are four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-third** of the marks assigned to that question will be deducted as penalty.
 - (ii) If a candidate gives more than one answer, it will be treated as a **wrong answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
 - (iii) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

1. Two identical spring balances S_1 and S_2 are connected one after the other and are held vertically as shown in the figure. A mass of 10 kg is hanging from S_2 . If the readings on S_1 and S_2 are W_1 and W_2 respectively, then :

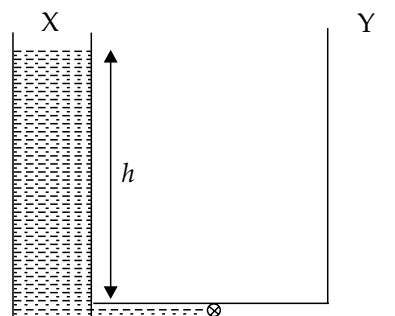


- (a) $W_1 = 5$ kg and $W_2 = 10$ kg
 - (b) $W_1 = 10$ kg and $W_2 = 5$ kg
 - (c) $W_1 = 5$ kg and $W_2 = 5$ kg
 - (d) $W_1 = 10$ kg and $W_2 = 10$ kg
2. A stone is thrown horizontally from the top of a 20 m high building with a speed of 12 m/s. It hits the ground at a distance R from the building. Taking $g = 10 \text{ m/s}^2$ and neglecting air resistance will give :
 - (a) $R = 12$ m
 - (b) $R = 18$ m
 - (c) $R = 24$ m
 - (d) $R = 30$ m
 3. A sphere of volume V is made of a material with lower density than water. While on Earth, it floats on water with its volume $f_1 V$ ($f_1 < 1$) submerged. On the other hand, on a spaceship

accelerating with acceleration $a < g$ (g is the acceleration due to gravity on Earth) in outer space, its submerged volume in water is $f_2 V$. Then :

- (a) $f_2 = f_1$
- (b) $f_2 = (1 - \frac{a}{g}) f_1$
- (c) $f_2 > f_1$
- (d) $f_2 = -a/g f_1$

4. Two identical containers X and Y are connected at the bottom by a thin tube of negligible volume. The tube has a valve in it, as shown in the figure. Initially container X has a liquid filled up to height h in it and container Y is empty. When the valve is opened, both containers have equal amount of liquid in equilibrium. If the initial (before the valve is opened) potential energy of the liquid is P_1 and the final potential energy is P_2 then :



- (a) $P_1 = P_2$
 - (b) $P_1 = 4P_2$
 - (c) $P_1 = 2P_2$
 - (d) $P_1 = 8P_2$
5. A particle is moving in a circle of radius R with a constant speed v . Its average acceleration over