



## ***NATIONAL ASSESSMENT FOR SCIENTIFIC TEMPERAMENT & APTITUDE***

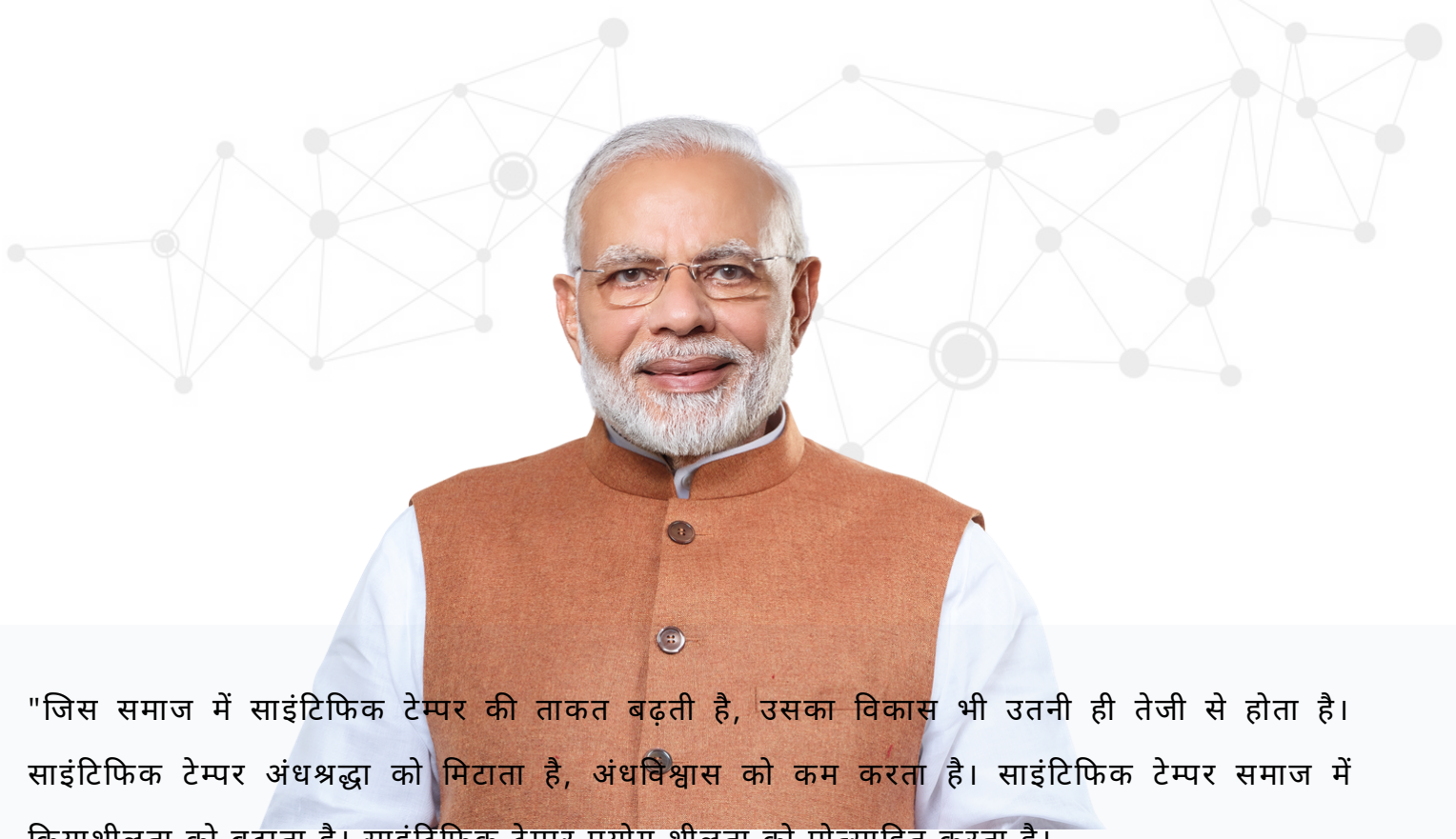
# **NASTA**

An Initiative of



सीएसआईआर - राष्ट्रीय विज्ञान, प्रौद्योगिकी और विकास अध्ययन संस्थान (निस्टैड्स)  
**CSIR - National Institute of Science, Technology and Development Studies (NISTADS)**

A Constituent Laboratory of CSIR, Under Department of Scientific and Industrial Research, Government of India.



"जिस समाज में साइंटिफिक टेम्पर की ताकत बढ़ती है, उसका विकास भी उतनी ही तेजी से होता है। साइंटिफिक टेम्पर अंधश्रद्धा को मिटाता है, अंधविश्वास को कम करता है। साइंटिफिक टेम्पर समाज में क्रियाशीलता को बढ़ाता है। साइंटिफिक टेम्पर प्रयोग शीलता को प्रोत्साहित करता है।

हर चीज में रीजनिंग खोजता है, तर्क और तथ्यों के आधार पर अपनी राय बनाने की समझ पैदा करता है और सबसे बड़ी बात, ये फियर ऑफ अननोन को चुनौती देने की शक्ति देता है।"

"The society in which the strength of Scientific Temper grows, it develops equally fast. Scientific Temper eradicates superstition, reduces superstition. Scientific Temper increases activity in society. Scientific Temper encourages usability. Finds reasoning in everything, builds understanding to form its own opinion based on logic and facts and, most importantly, it empowers to challenge the Fear of Unknown."

## **Shri Narendra Modi**

Prime Minister of India

(Ref: Inaugural Speech at 5th IISF, 05.11.2019)



# Knowledge and Awareness Mapping Platform

Knowledge and Awareness Mapping Platform “KAMP” is an International intellect E-based assessment platform to evaluate cognizance of 21st century skills, awareness ,and knowledge of Science, Technology & Humanities among students.

## VISION

"To identify and capture Scientific and Technological temperament in students to make "India -A Global Leader in the Field of Science, Technology & Humanities"

### Director's Message

“CSIR-NISTADS is one of the premier institutes of the country to provide inputs to policymakers for formulating the policy of Science, Technology, Innovation (STI), and entrepreneurship. Knowledge and Awareness Mapping Platform (KAMP), aimed to develop and map the Scientific Temperament of children, will help nurture innovation and creativity from an early age. The analyses of the mapping data would be used to create inputs for S&T policy to the new generation of scientific leaders are produced in the country.”



**Dr. Ranjana Aggarwal**  
Director, CSIR-NISTADS

**Knowledge and Awareness Mapping Platform (KAMP)** is an initiative and Knowledge Alliance of Council of Scientific and Industrial Research-National Institute of Science Technology and Development Studies (CSIR-NISTADS), Under the Department of Scientific and Industrial Research, Govt. of India with M/S, NYSA Communications Pvt. Ltd (NCPL), Noida, U.P. It intends to develop creativity, meaningful learning, critical reading, and thinking skills that brings out the inherent abilities of students.

**CSIR-NISTADS** is one of the constituent laboratories of the **Council of Scientific and Industrial Research (CSIR), Under DSIR, Govt. of India, New Delhi**. The Institute is devoted to research on policy, policy advisory and provides research support to national S&T agencies on science, technology, society, and innovation challenges.

CSIR-NISTADS is a pioneering research organization in the realm of S&T policy research in the areas of Innovation systems, S&T Human resources, Rural development, MSME, Global governance, Climate change, Energy and Environment and other domains related to STI (Science, Technology, and Innovation) policy. One of the pressing issues of India is that young students are not attracted to opt science as a career, and therefore, there is a strong need to address this issue.

# What is Scientific Temperament?

Scientific temperament refers to an individual's attitude of logical and rational thinking. An individual is considered to have a scientific temper if s/he employs a scientific method of decision-making in everyday life. The term was first coined by India's first Prime Minister, Jawaharlal Nehru, in his book 'The Discovery of India'.

"A Statement on Scientific Temper" prepared by a group of scholars and issued on behalf of the Nehru Centre, Bombay, in July 1981, mentions that "Scientific Temper involves the acceptance, amongst others, on the following premises:

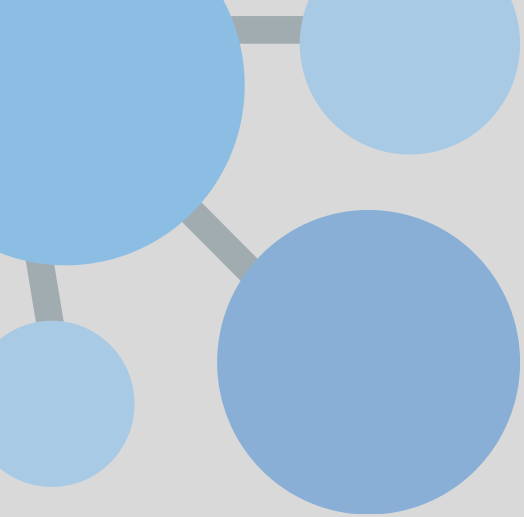
- (a) The method of science provides a viable method of acquiring knowledge;
- (b) The human problems can be understood and solved in terms of knowledge gained through the application of the method of science;
- (c) The fullest use of the method of science in everyday life and every aspect of human endeavor from ethics to politics and economics is essential for ensuring human survival and progress; and
- (d) That one should accept knowledge gained through the application of the method of science as the closest approximation of truth at that time and question what is incompatible with such knowledge; and that one should from time to time re-examine the basic foundations of contemporary knowledge."

## Indian Constitution on Scientific Temperament

**Article 51 A** of our constitution which deals with fundamental duties makes it a duty of every citizen to develop **Scientific Temper; (as per clause [h])**. It is the Scientific Temper that helps in developing Secularism, Humanism & Spirit of enquiry and reform.

The Government of India, through the National Council for Science and Technology Communication, dedicated the 28 February National Science Day of 2014 to the theme "**Fostering Scientific Temper**"

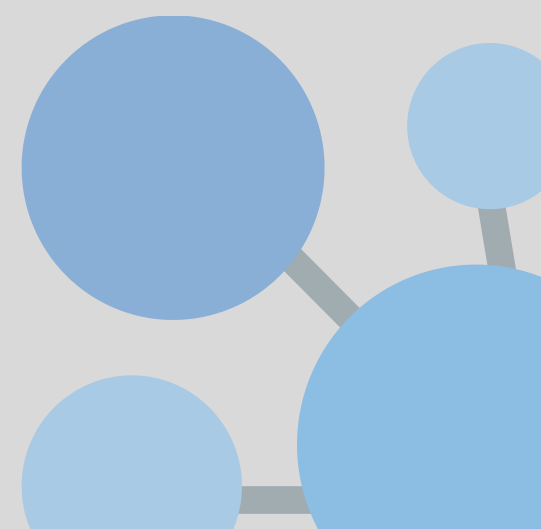
Knowledge and Awareness Mapping Platform (KAMP) is the first initiative taken by CSIR-NISTADS, to map Scientific temperament and Attitude of young students based on their assessment outcome and nurture them as future scientists of the country. It believes that every student is blessed with a core talent and aimed to bring the best in them through this platform.



*amplifying*  
KNOWLEDGE &  
**creativity**

NATIONAL ASSESSMENT OF  
SCIENTIFIC TEMPERAMENT AND APTITUDE

**NASTA**



# National Assessment for Scientific Temperament and Aptitude [NASTA]

National Assessment for Scientific Temperament and Aptitude (NASTA) is designed and developed to identify and promote scientific temper among students. This is one of the primary initiatives under KAMP. It is an Attribute-Based assessment as against only Subject Based Assessment. NASTA provides educators, policymakers, and parents with a common measure of student achievement.

## NEED OF NASTA

- NASTA assess a comprehensive, integrated approach in mapping the scientific temperament of young brains.
- Building a concept to develop an understanding of the scientific aspects of nature.
- To help the student identify their hidden talent and provides a platform for self-assessment. Mapping and help nurturing the scientific aptitude among students.

## OBJECTIVE

- Mapping and helping students/parents to identify scientific attitude & enable them to understand their inherent potential for different career choices.
- Awareness among students on the latest developments in emerging technologies.
- Map specific attributes essential to become a successful scientist or technologist.
- Infuse a healthy competitive spirit through rewards, based on performance levels.

## IMPACT AND OUTCOME

- Identify learning outcome levels of students in India and abroad.
- Comprehensive advisory for students/parents which will help in identifying the areas of strength.
- Data and Analytics will support policymakers to analyze the current learner's level.
- Support schools to provide an enabling environment to identify students with unique skills.
- Help nurture their skills/talents by creating District KAMP - Junior Scientist Club.
- Helps policymakers to take necessary curricular reforms.

# KAMP Offerings to Students



## REGISTER...

Register to become a part of National Science Community. School and Student can register online through KAMP website <http://kamp.nistads.res.in>.



## ASSESS...

Students will participate in NATIONAL ASSESSMENT OF SCIENTIFIC TEMPERAMENT AND APTITUDE “NASTA” to assess the present level of scientific temper



## ADVICE...

Based on the outcome of assessment, a comprehensive advisory will be shared with students on how they can improve and develop scientific temper.



## ENGAGE...

Registered students will become a part of “District – KAMP Junior Scientist Club” a platform to nurture scientific temper among students



## EXPLORE...

National level toppers will get an opportunity to represent their achievements in National/State level Science events like “IISF” etc.



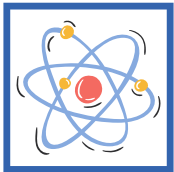
## EXCEL...

High performers will get an opportunity to visit and work closely with various National Science, Technology & Research Institutions.

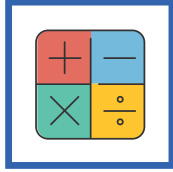
## Assessment Overview

### What subjects does NASTA assess?

National Assessment for Scientific Temperament & Aptitude (NASTA) includes a range of specific subjects at grades 5th to 10th to provide a comprehensive look at the wide array of academic areas that are a part of a student's education.



Science



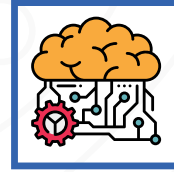
Mathematics



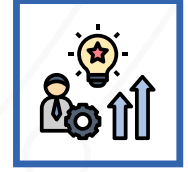
EVS/Humaities



IT/Computers



Reasoning



Aptitude

### What is it like for students and schools to participate in NASTA?

NASTA is administered offline/online to students during regular school hours. Each student is assessed on the different attributes of NASTA. Students spend between 90 and 120 minutes taking the assessment. Student responses on NASTA are private, and the privacy of each participating school and student is essential. KAMP Planning & Monitoring Committee sets the NASTA policy, determines the assessment schedule, and what content should be measured. NASTA will be administered in English, Hindi, or other regional languages. All students/schools of CBSE, ICSE/ISC, Other State Boards, and other institutions can participate in NASTA.

### Assessment Indicators

NASTA indicators involve means and methods to reach scientific information and thus allows the student to think scientifically. The science process occurs naturally, spontaneously in our minds. By logically breaking down the steps in our thinking, we use the scientific process to find out how to answer our questions about how the world works. National Assessment for Scientific Temperament & Aptitude includes the following attributes:

#### KNOWING



RECOGNITION



OBSERVATION

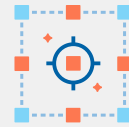


CLASSIFICATION

#### APPLYING



PROBLEM SOLVING



PRECISION



PREDICTION

#### REASONING



CRITICAL THINKING



INTERPRETATION



KAMP introduces the career advisory and aptitude assessment for senior students of schools and other institutions. NASTA assess the awareness and aptitude for senior students. Individuals differ from each other in terms of psychological dimensions such as ability, interest, aptitude, personality motivation, and emotions. Aptitude is one such dimension which refers to the ability to acquire skill or knowledge in a particular area. NASTA results help the students to revalidate their choices and interest areas to excel in the future. It gives ample time to the students to indulge in self-explanation and self-preparation in academics as well as in exploring the world.

**Following are the assessment indicators of NASTA:**

### **MECHANICAL REASONING**

It is the ability to understand and apply mechanical concepts and principles to solve problems. It assesses the areas of acceleration, pressure, energy transformation, work, and power, levers, pulleys, screws, springs, tools, etc.

### **MATHEMATICAL REASONING**

It refers to understanding numerical relationships and applying the same to the issue/problem. It also covers areas like ratio, percentage, square and square root, cube and cube root, number sequence, factorization, linear equation, work, and speed, etc.

### **DIGITAL LITERACY**

Digital literacy refers to an individual's ability to find, evaluate, and compose clear information through writing and other media on various digital platforms.

### **SPATIAL APTITUDE**

It is related to the capacity to mentally manipulate actual materials through imagining. This assesses how well a student understands words and their synonyms, spells the word correctly, and identifies the correct meaning of the given idioms/proverbs.

### **LANGUAGE APTITUDE**

It is concerned with a person's ability to use and understand written language. This assess how well a student understand words and their synonyms, spell the word correctly and identifies the correct meaning of the given idioms/proverbs.

### **PERCEPTUAL APTITUDE**

It refers to a person's ability to quickly, accurately, and meaningfully compare visual information like numbers, objects, pictures, or patterns. It assesses how students compare the paired groups of letters or numbers and identify the similarities or differences.

### **ABSTRACT REASONING**

It is non-verbal and assesses how well students can reason and logically relate geometric shapes or designs. Series and sequences based questions.

### **VERBAL REASONING**

It is the ability to understand and reason using concepts expressed in words. It evaluated a student's ability to think constructively with words.

# Assessment Report

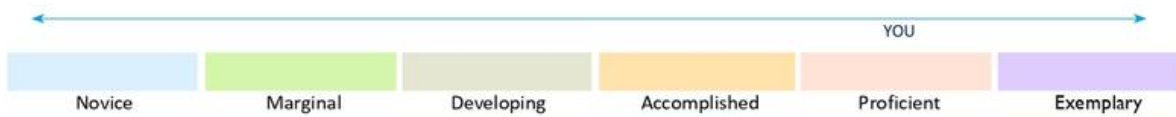


## NASTA 2020 ASSESSMENT REPORT

Shubham Jain | National Assessment of Scientific Temperament & Aptitude | Class: 5 | Dec 15, 2020 | School Name: DPS World School

Your Overall Score: **85%**      National Rank: **120**      Grade Achieved: **A**

Congratulations! You have successfully completed your assessment. This is a tremendous accomplishment!



### What Does this Diagram Mean?

The diagram uses six different performance rating categories to show your overall performance in the assessment. Each rating reflects the overall grade achieved by you.

### Performance Rating Categories\*\*

**Exemplary:** The Exemplary level signifies superior mastery of knowledge and skills. The learning shown by the student exceeds grade-level expectations in significant ways.

**Proficient:** The Proficient level represents solid mastery of knowledge and skills, indicating that the learning shown by the student meets grade-level expectations.

**Accomplished:** The Accomplished level denotes partial mastery of the knowledge and skills that are fundamental for satisfactory work.

**Developing:** The Developing level denotes developing stage mastery of the knowledge and skills. The learning shown by the student may be inconsistent, and meets grade-level expectations at a minimal level.

**Marginal:** The Marginal level indicates little or no mastery of fundamental knowledge and skills. The learning shown by the student does not meet grade-level expectations.

**Novice:** The Novice level indicates no mastery of fundamental knowledge and skills. The learning shown by the student does not meet grade-level expectations.

\*\*The categories presented on this report were created to help you see where you may need additional preparation. They should not be used or interpreted for other purposes, such as career options, job decisions.

### How is Your Score Determined?

KAMP uses subject matter experts—project professionals from around the world and from many different disciplines—to determine the grading categories and the ranking system. Each scored question in the assessment is worth one point; and your final score is calculated by totaling the points you have earned in the assessment. The number of questions you answer correctly places you within one of the performance rating categories you see on this report.

### Your Performance by Domain:

Using the same categories (as above), your performance has been calculated within each domain. This will help you identify your strong areas—as well as those needing improvement—so that you can plan your future holistic development.

Knowing			Applying			Reasoning	
Recognition	Observation	Classification	Problem Solving	Precision	Prediction	Critical Thinking	Interpretation
A	A	B+	A	A+	A	B+	A

### What Can You Do Next?

Celebrate your accomplishment and reward yourself for all your hard work! You should also:

- **Check your Student Login.** Look for more information on when your certificate will be delivered.
- **Start thinking about your future professional development.** Learning more about your exam performance is a great way to start. See our web page: <http://kamp.nistads.res.in/info/KAMPJuniorScientist> for more details on how you can be a part of Junior Scientist Club.

# Awards and Recognition

Student Awards



18

*Jr. Scientist Award*



576

*Critical Thinker Award*



11,824

*Medal of Excellence*



- Awards are being categorised into National, State and District from left to right and top to bottom.
- Class-wise grades will be awarded to the toppers.
- Certificate of Participation will be given to all the participants of KAMP.
- Certificate of Appreciation will be awarded to the KAMP-Nodal Officer.
- Science Education Excellence Award, Incubator Award and Progressive Educators Awards for School at National, State and District Level

For more details, visit <http://kamp.nistads.res.in>

# KAMP Jr. Scientist Club (K-JSC)

CSIR-NISTADS brings an opportunity for students to become a part of the National Scientist Community by creating "KAMP-JSC" [Knowledge and Awareness Mapping Platform-Junior Scientist Club] in each District.

*KAMP-JSC will provide a platform to nurture scientific temperament for students to become a Creator, Innovator, and A Problem Solver!!*

## Mission/Objectives of K-JSC

- Bringing scientific awareness among students.
- To Promote STEAM Education and to help students learn science differently.
- Disseminate information on Science & Technology (S&T).
- Reach out to fellow students especially in remote areas to popularize science.
- Stimulate spirit of curiosity, inquiry, innovation, and creativity to supplement conventional education and foster scientific temper.

## How KAMP-JSC is Formed at District Level?

- KAMP-JSC is a District Level Self-Sustainable Club.
- Schools and students enrolled for KAMP will be a member of KAMP-JSC
- In each district 1 school will be selected as KAMP Facilitation center and the school Principal will be District President of JSC.
- KAMP meets, events, and conferences shall be organized at KAMP Facilitation Center.

## Benefits of K-JSC

- Access communication materials provided by CSIR-NISTADS free of cost or at attractive discounts (depending on availability).
- Exchange views and ideas, express opinions and gain insight (s) into a vast array of activities of other clubs through the KAMP/NISTADS newsletter.
- Participate in programs including training and campaigns organized by CSIR-NISTADS.
- Get together with other KJSC at the regional level to form a cluster to organize such programs as training, workshops, jathas, lecture-cum-demonstrations, etc. for which KAMP could assist in the form of resource persons, course materials and kits, and other necessary inputs- in response to a proposal for specific activities.
- Get national exposure and recognition through the KAMP website.

# NASTA 2019 at a Glance

## NATIONAL TOPPERS AND JR. SCIENTIST AWARDEE OF NASTA 2019



**RAGHAV AKAR**  
Cambridge Court High School  
Jaipur, Rajasthan  
Class 5



**PRIYANSH NAIR**  
Bhavan's Vidya Mandir  
Eroor, Ernakulam, Kerala  
Class 5



**JATIN VIKASH**  
Ambience Public School  
South Delhi, Delhi  
Class 6



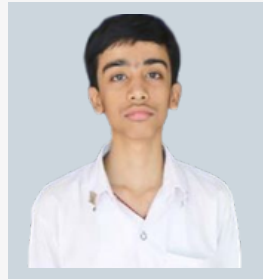
**DEVANSHI MUNJAL**  
Swami Sant Das Public School  
Punjab, Kapurthala  
Class 6



**DEVIKA P.**  
Saraswati Vidyalaya Sr. Sec. Residential School  
Thiruvananthapuram, Kerala  
Class 7



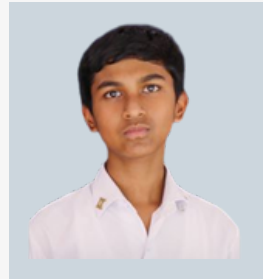
**SARTHAK AGGARWAL**  
Delhi Public School  
Jaipur, Rajasthan  
Class 7



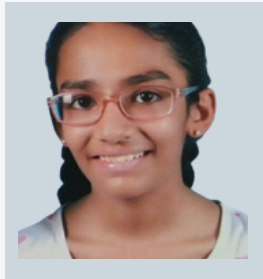
**SHREYANSH KUMAR**  
Delhi Public School  
Dhanbad, Jharkhand  
Class 8



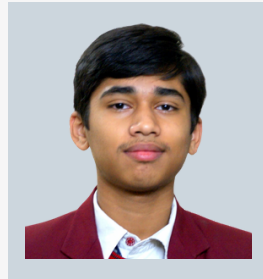
**ASHISH YAKASIRI**  
Step by Step School  
Noida, Uttar Pradesh  
Class 8



**MANISH KUNDU**  
Delhi Public School  
Dhanbad, Jharkhand  
Class 9



**KHUSHI RASHMIN PUROHIT**  
Navy Children School  
Porbandar, Gujarat  
Class 9



**MRIGANK PAWAGI**  
Vishwa Bharti Public School  
Noida, Uttar Pradesh  
Class 10



**SHIVAM KUNTAL**  
Delhi Public School  
Nagpur, Maharashtra  
Class 10

## SCHOOLS RECOGNISED FOR OUTSTANDING PERFORMANCE



Delhi Public School  
Dhanbad, Jharkhand



Ambience Public School  
South Delhi, Delhi



Swami Sant Das Public School  
Punjab, Kapurthala



Vishwa Bharti Public School  
Noida, Uttar Pradesh



Cambridge Court High School  
Jaipur, Rajasthan



Step by Step School  
Noida, Uttar Pradesh



Bhavan's Vidya Mandir  
Eroor, Ernakulam, Kerala



Navy Children School  
Porbandar, Gujarat



Delhi Public School  
Nagpur, Maharashtra



Saraswati Vidyalaya Sr. Sec. Residential School  
Thiruvananthapuram, Kerala



Delhi Public School  
Jaipur, Rajasthan

# KAMP Planning and Monitoring Committee (KPMC)

KPMC is a monitoring committee that includes representatives of CSIR laboratory (CSIR-NISTADS), NCPL & other members of Industry. KPMC monitors, provide direction, vision, advice, and road-map on the conduct, quality & upgrades of KAMP.

## Prof. B. B. Dhar

Chairman - KPMC  
Former Director, CSIR-CMRI

## Mr. Puneet Kumar

Secretary - KPMC  
Chairman, NCPL

## Dr. Prashant Goswami

Member - KPMC  
Former Director, CSIR-NISTADS

## Dr. Naresh Kumar

Member - KPMC  
Head-BDG, CSIR-NISTADS

## Dr. Vipin Kumar

Member - KPMC  
Head-PME, CSIR-NISTADS

## Dr.(Mrs.) Kastiuri Mandal

Member - KPMC  
Sr. Scientist, CSIR-NISTADS

## Mr. Rajeev Gupta

Member - KPMC  
Managing Director, RDI (India) Pvt. Ltd.

## Mr. Ashish Kumar Mittal

Member - KPMC  
Vice President, NCPL

## Mr. Yadwinder Mittal

Member - KPMC  
Vice President, NCPL

# KAMP Advisory Committee (KAC)

KAMP Advisory Committee (KAC) is a panel of experts for guidance on various aspects like subjects, curriculum questions, evaluation parameters, etc. which will help KAMP evolve into a robust and credible Global Assessment Platform for building & recognizing Scientific Temperament & Innovation in students from an early age.

## Dr. Ranjana Aggarwal

Director, CSIR-NISTADS

## Prof. B. B. Dhar

Chairman - KPMC

## Mr. Puneet Kumar

Secretary - KPMC

## Prof. B. K. Khuthiala

Vice-Chancellor, Makhanlal Chaturvedi  
National University of Journalism &  
Communication, Bhopal

## Shri. Mukul Kanitkar

National Organizing Secretary,  
Bharatiya Shikshan Mandal

## Dr. V. N. Ojha

Former Chief Scientist, CSIR-NPL,  
New Delhi

## Dr. Ram Boojh

CEO, Mobius Foundation  
Former Programme Specialist  
Environment, UNESCO New Delhi

## Prof. Sudhir Kumar Sopory

Former Vice-Chancellor, Jawaharlal  
Nehru University, New Delhi

## Dr. Arvind Ranade

Scientist F, Astronomy and VIPNET Division,  
Vigyan Prasar, New Delhi

## Mrs. Meera Balachandran

Director - Education Quality  
Foundation of India  
Former Principal of Ramjas School,  
New Delhi

## Shri. Rakesh Kr. Upadhyay

Centennial Chair Professor, Bharat  
Adhyayan Kendra, Banaras Hindu  
University, Varanasi

## Dr. Naresh Kumar

Senior Principal Scientist &  
Head, Business Development  
Group (BDG)

## Prof. (Dr.) Syed Mohammad Akhtar

Professor - Faculty of Architecture  
Ekistics, Jamia Millia Islamia, New Delhi

## Prof. Umesh Chandra Kulshrestha

Former Scientist, CSIR-IICT, Hyderabad  
Professor - School of Environmental  
Sciences, Jawaharlal Nehru University,  
Delhi

## Prof. C. P. Kaushik

Former Dean and Chairman, Dept. of  
Environmental Science and Engg.  
G.J. University of S & T, Hisar, Haryana

## Dr. Tabassum Jamal

Former Chief Scientist, CSIR-NISTADS

## Dr. Mohammad Aslam Parvaiz

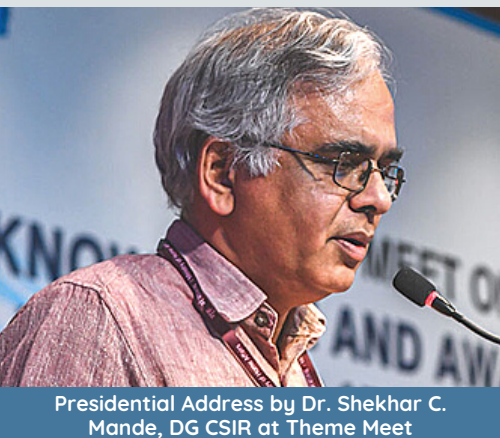
Former Vice-Chancellor, Maulana Azad  
National Urdu University (Hyderabad)



Key Note Address by Prof. K. Vijay Raghavan, Principal Scientific Advisor to Govt. of India at Theme Meet



Dr. Ranjana Aggarwal (Director, CSIR-NISTADS), Mr. Puneet Kumar (Secretary-KPMC) felicitated KAMP Achievers



Presidential Address by Dr. Shekhar C. Mande, DG CSIR at Theme Meet



Students appearing for NASTA 2019 held on 27th and 28th January, 2020



Dr. Ranjana Aggarwal (Director, CSIR-NISTADS) felicitated KAMP -Nodal Officer of DPS, Gr. Noida



Students visited CSIR-National Physical Laboratory (CSIR-NPL) on 18th Oct 2019



Student Felicitation Ceremony held at Delhi Public School, Greater Noida in presence of Dr. Ranjana Aggarwal, Director CSIR-NISTADS



NASTA 2019 Exam



Student Felicitation at CSIR-NPL, New Delhi



Students visit at CSIR-NPL, New Delhi



Unveiling KAMP Information Brochure by Dignitaries



**KAMP OPERATIONS AND COORDINATION OFFICE**

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Uttar Pradesh

**T:** +91-9319634387,7303064387 | **E:** info@kamp.res.in

**W:** <http://kamp.nistads.res.in>

In Knowledge Alliance with







## **NATIONAL ASSESSMENT FOR SCIENTIFIC TEMPERAMENT & APTITUDE**

# **NASTA**

**STUDENT INFORMATION BROCHURE**

An Initiative of



सीएसआईआर - राष्ट्रीय विज्ञान, प्रौद्योगिकी और विकास अध्ययन संस्थान (निस्टैड्स)  
**CSIR - National Institute of Science, Technology and Development Studies (NISTADS)**

A Constituent Laboratory of CSIR, Under Department of Scientific and Industrial Research, Government of India.

# Knowledge and Awareness Mapping Platform

KAMP has been initiated to identify and promote gifted and talented students in the field of Science, Technology and Humanities across India. Based on the algorithm designed & developed by CSIR-NISTADS & M/S NCPL, KAMP would support in identifying the talent at primitive stage and nurturing them in their areas of strength. KAMP is aimed and developed to provide easy, objective, measurable and unbiased mapping of knowledge and awareness levels on various basic topics, with focus on Scientific Temper. The outcome of the KAMP will provide a comprehensive advisory not only to the young students but also to schools, teachers and parents.

## KAMP Offerings to Students

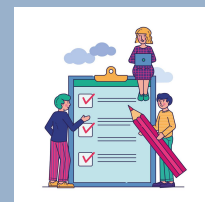


### REGISTER...

Register to become a part of National Science Community. School and Student can register online through KAMP website <http://kamp.nistads.res.in>.

### ASSESS...

Students will participate in NATIONAL ASSESSMENT OF SCIENTIFIC TEMPERAMENT AND APTITUDE “NASTA” to assess the present level of scientific temper

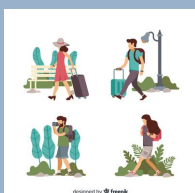


### ADVICE...

Based on the outcome of assessment, a comprehensive advisory will be shared with students on how they can improve and develop scientific temper.

### ENGAGE...

Registered students will become a part of “District – KAMP Junior Scientist Club” a platform to nurture scientific temper among students



### EXPLORE...

High performers will get an opportunity to visit and work closely with various National Science, Technology & Research Institutions.

### EXCEL...

National level toppers will get an opportunity to represent their achievements in National/State level Science events like “IISF” etc.



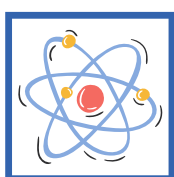
# NATIONAL ASSESSMENT FOR SCIENTIFIC TEMPERAMENT & APTITUDE (NASTA)

*To identify and capture Scientific and Technological temperament in students to make  
"India -A Global Leader in the Field of Science, Technology & Humanities"*

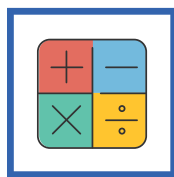
**FOR STANDARD 5th to 10th**

## What subjects does NASTA assess?

National Assessment for Scientific Temperament & Aptitude (NASTA) includes a range of specific subjects at grades 5th to 10th to provide a comprehensive look at the wide array of academic areas that are a part of a student's education.



Science



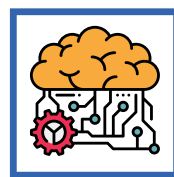
Mathematics



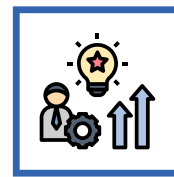
EVS/Humanities



IT/Computers



Reasoning



Aptitude

## What is it like for students and schools to participate in NASTA?

NASTA is administered offline/online to students during regular school hours. Each student is assessed on the different attributes of NASTA. Students spend between 90 and 120 minutes taking the assessment. Student responses on NASTA are private, and the privacy of each participating school and student is essential. KAMP Planning & Monitoring Committee sets the NASTA policy, determines the assessment schedule, and what content should be measured. NASTA will be administered in English, Hindi, or other regional languages. All students/schools of CBSE, ICSE/ISC, Other State Boards, and other institutions can participate in NASTA.

## Assessment Details

Duration (90 minutes)			
Class	Subject	No. of Questions	Total Marks
5 to 8 (Paper 1)	Science	30	30
	Mathematics	30	30
9 & 10 (Paper 1)	Science	40	40
	Mathematics	40	40
5 & 10 (Paper 2)	Evs/Humanities	20	20
	IT/Computers	20	20
	Aptitude/Reasoning	20	20

Visit <http://kamp.nistads.res.in> for syllabus details

## FOR STANDARD 11th to 12th and

## PRE-GRADUATE & NON-COLLEGIATE STUDENTS

NASTA introduces the career advisory and aptitude assessment for senior students of schools and other institutions. NASTA assesses the awareness and aptitude for senior students. Individuals differ from each other in terms of psychological dimensions such as ability, interest, aptitude, personality motivation, and emotions. Aptitude is one such dimension which refers to the ability to acquire skill or knowledge in a particular area. NASTA results help the students to revalidate their choices and interest areas to excel in the future. It gives ample time to the students to indulge in self-explanation and self-preparation in academics as well as in exploring the world.

### Following are the assessment indicators of NASTA:

#### MECHANICAL REASONING

It is the ability to understand and apply mechanical concepts and principles to solve problems. It assesses the areas of acceleration, pressure, energy transformation, work, and power, levers, pulleys, screws, springs, tools, etc.

#### MATHEMATICAL REASONING

It refers to understanding numerical relationships and applying the same to the issue/problem. It also covers areas like ratio, percentage, square and square root, cube and cube root, number sequence, factorization, linear equation, work, and speed, etc.

#### DIGITAL LITERACY

Digital literacy refers to an individual's ability to find, evaluate, and compose clear information through writing and other media on various digital platforms.

#### SPATIAL APTITUDE

It is related to the capacity to mentally manipulate actual materials through imagining. This assesses how well a student understands words and their synonyms, spells the word correctly, and identifies the correct meaning of the given idioms/proverbs.

#### LANGUAGE APTITUDE

It is concerned with a person's ability to use and understand written language. This assesses how well a student understands words and their synonyms, spells the word correctly and identifies the correct meaning of the given idioms/proverbs.

#### PERCEPTUAL APTITUDE

It refers to a person's ability to quickly, accurately, and meaningfully compare visual information like numbers, objects, pictures, or patterns. It assesses how students compare the paired groups of letters or numbers and identify the similarities or differences.

#### ABSTRACT REASONING

It is non-verbal and assesses how well students can reason and logically relate geometric shapes or designs. Series and sequences based questions.

#### VERBAL REASONING

It is the ability to understand and reason using concepts expressed in words. It evaluates a student's ability to think constructively with words.

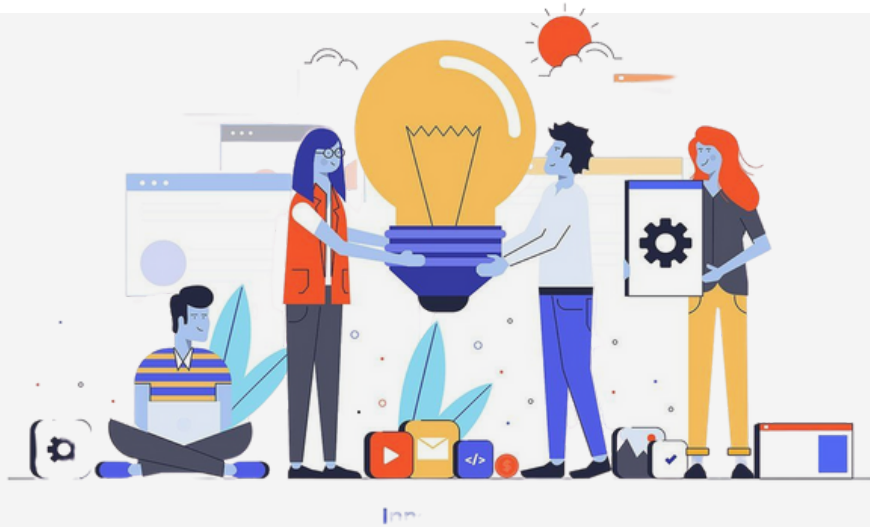
## Assessment Details

### Duration (90 minutes)

Class	Subject	No. of Questions	Total Marks
11 to 12 & Pre graduate & Non-collegiate students	Aptitude & Career Advisory Test	80	80

Visit <http://kamp.nistads.res.in> for sample questions

# KAMP JUNIOR SCIENTIST CLUB (JSC)



**JOIN TO BE A PART OF NATIONAL SCIENCE  
COMMUNITY**

***BECOME A CREATOR, INNOVATOR AND A PROBLEM SOLVER!!***

Clubs

White Club  
Bronze Club  
Silver Club  
Gold Club  
Platinum Club

Innovation Projects on

Robotics  
Artificial Intelligence  
Steam Education  
Environmental Issues  
Technology Advancements  
Research Papers on Social Cause

Enhance your Skills

Leadership  
Teamwork  
Communication Skills  
Making Connections  
Self-Direction  
Motivation & Confidence



FOR MORE DETAILS, VISIT [HTTP://KAMP.NISTADS.RES.IN](http://KAMP.NISTADS.RES.IN)



# Awards and Recognition

## Student Awards



18

*Jr. Scientist Award*



576

*Critical Thinker Award*



11,824

*Medal of Excellence*



- Awards are being categorised into National, State and District from left to right and top to bottom.
- Class-wise grades will be awarded to the toppers.
- Certificate of Participation will be given to all the participants of KAMP.
- Certificate of Appreciation will be awarded to the KAMP-Nodal Officer.
- Science Education Excellence Award, Incubator Award and Progressive Educators Awards for School at National, State and District Level

For more details, visit <http://kamp.nistads.res.in>

# Steps to Register

## FOR FIRST TIME REGISTRATION

- Visit KAMP website <https://kamp.nistads.res.in>
- Select your respective city and school
- Fill the registration form
- Pay online with convenience
- Get login credentials on registered mail/mobile number

## FOR ALREADY REGISTERED STUDENTS

- Visit KAMP website <https://kamp.nistads.res.in>
- Enter your credentials to login
- Pay online with convenience
- Access reference material & sample questions

## STUDENT REGISTRATION FORM

Student Name: \_\_\_\_\_

Class: \_\_\_\_\_ Section: \_\_\_\_\_ Roll No.: \_\_\_\_\_

Parent/Guardian's Name: \_\_\_\_\_ Gender: Male  Female

Mob. No.: \_\_\_\_\_ E-mail Id: \_\_\_\_\_

Fee: **Rs. 400/-**

(In words): Four Hundred Only

### Declaration:

I hereby declare that all the details mentioned above are true to best of my knowledge. I have read and understood the terms of participation governing KAMP assessment and agree that I and my child shall abide by them.

\*Student Registration and Payment can also be made online through the following link:  
<http://kamp.nistads.res.in/payment>

Date: \_\_\_ / \_\_\_ / \_\_\_\_\_

Guardian/Student Signature: \_\_\_\_\_

### Minimum System Requirement for Online Exam

- A consistent connection speed of 1 Mbps down/up is required. We recommend testing on a wired network as opposed to a wireless network
- Webcam may be internal or may be external and connected to the computer.
- Updated browser should be installed in the computer.

# About CSIR-NISTADS

**CSIR-NISTADS** is one of the constituent laboratories of the **Council of Scientific and Industrial Research (CSIR), Under DSIR, Govt. of India, New Delhi**. The Institute is devoted to research on policy, policy advisory and provides research support to national S&T agencies on science, technology, society, and innovation challenges.

CSIR-NISTADS is a pioneering research organization in the realm of S&T policy research in the areas of Innovation systems, S&T Human resources, Rural development, MSME, Global governance, Climate change, Energy and Environment and other domains related to STI (Science, Technology, and Innovation) policy. One of the pressing issues of India is that young students are not attracted to opt science as a career, and therefore, there is a strong need to address this issue.

CSIR-NISTADS has initiated Knowledge and Awareness Mapping Platform (KAMP) with industrial partner M/S Nysa Communications Pvt. Ltd. (NCPL) to identify scientific temperament & scientific aptitude of young students based on their assessment outcome and nurture them as future scientists of the country. It believes that every student is blessed with a core talent and is aimed to bring the best in them through this platform. It also aims to inculcate critical thinking ability and bridge gaps which will be identified through KAMP assessment. Eventually, KAMP will support to readdress the policies that can be implemented by the Government for building scientific temperament among students



**Dr. Ranjana Aggarwal**  
Director, CSIR-NISTADS

## Director's Message

"CSIR-NISTADS is one of the premier institutes of the country to provide inputs to policymakers for formulating the policy of Science, Technology, Innovation (STI), and entrepreneurship. Knowledge and Awareness Mapping Platform (KAMP), aimed to develop and map the Scientific Temperament of children, will help nurture innovation and creativity from an early age. The analyses of the mapping data would be used to create inputs for S&T policy to the new generation of scientific leaders are produced in the country."

### KAMP OPERATIONS AND COORDINATION OFFICE

A-100, Sector - 65, Noida - 201301, Gautam Budh Nagar,  
Uttar Pradesh

T: +91-9319634387,7303064387 | E: info@kamp.res.in

W: <http://kamp.nistads.res.in>

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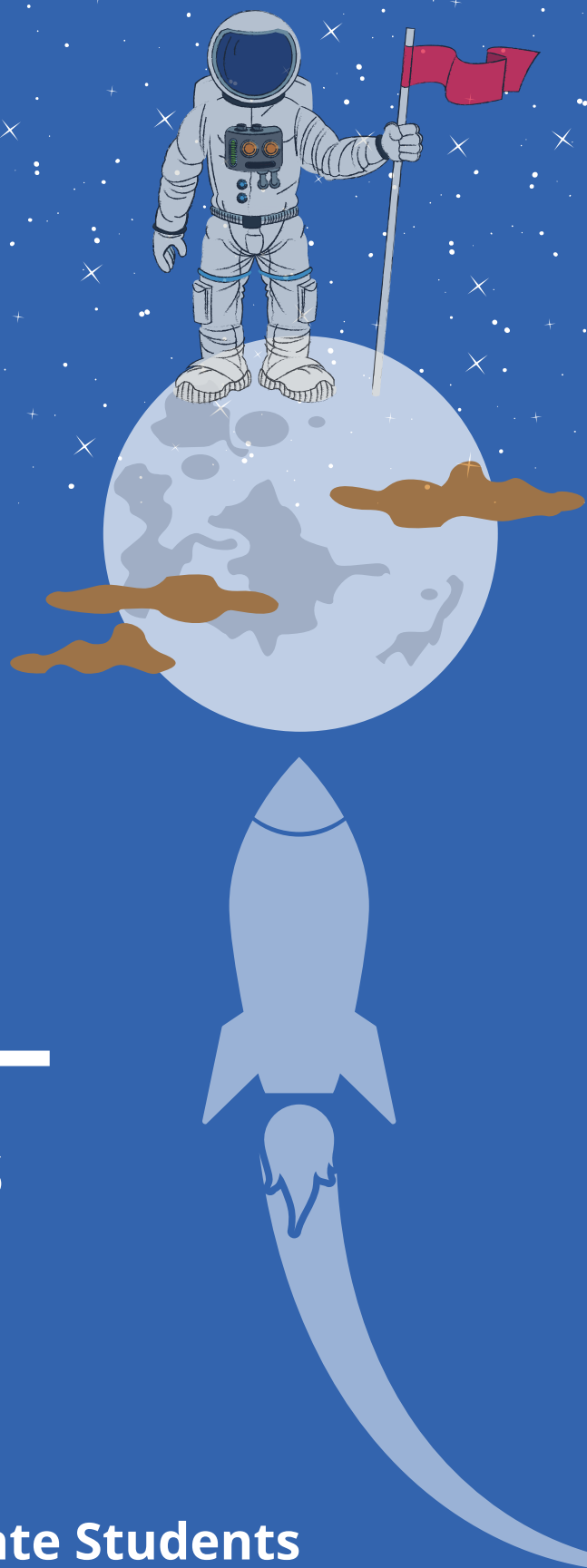


# National Assessment for Scientific Temperament & Aptitude [NASTA]

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## Syllabus Guidelines 2020 - 2021

For Class 11, 12 &  
Pre-Graduates & Non-Collegiate Students



An Initiative of



CSIR - NISTADS

सीएसआईआर - राष्ट्रीय विज्ञान, प्रौद्योगिकी और विकास अध्ययन संस्थान (निस्टैड्स)  
CSIR - National Institute of Science, Technology and Development Studies (NISTADS)

A Constituent Laboratory of CSIR, Under Department of Scientific and Industrial Research, Government of India.

# SUBJECT AREAS & SKILLS ASSESSED



## SKILL AREAS

Students are assessed across the following attributes:

- **MECHANICAL REASONING**

It is the ability to understand and apply mechanical concepts and principles to solve problems. It assesses the areas of acceleration, pressure, energy transformation, work, and power, levers, pulleys, screws, springs, tools, etc.

- **MATHEMATICAL REASONING**

It refers to understanding numerical relationships and applying the same to the issue/problem. It also covers areas like ratio, percentage, square and square root, cube and cube root, number sequence, factorization, linear equation, work, and speed, etc.

- **DIGITAL LITERACY**

Digital literacy refers to an individual's ability to find, evaluate, and compose clear information through writing and other media on various digital platforms.

- **SPATIAL APTITUDE**

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- **PERCEPTUAL APTITUDE**

It refers to a person's ability to quickly, accurately, and meaningfully compare visual information like numbers, objects, pictures, or patterns. It assesses how students compare the paired groups of letters or numbers and identify the similarities or differences.

- **ABSTRACT REASONING**

It is non-verbal and assesses how well students can reason and logically relate geometric shapes or designs. Series and sequences based questions.

- **VERBAL REASONING**

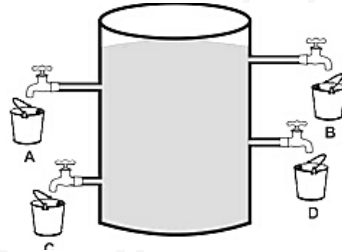
It is the ability to understand and reason using concepts expressed in words. It evaluates a student's ability to think constructively with words.



# SAMPLE QUESTIONS

1

## MECHANICAL REASONING



In the given figure which one of the buckets will get filled first?

- A. Bucket A
- B. Bucket B
- C. Bucket C
- D. Bucket D

2

## MATHEMATICAL REASONING

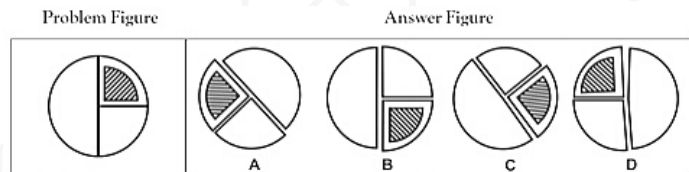
Points A, B, and C lie on a line and B is between A and C. If  $AB = 10$  cm and  $BC = 5.2$  cm, what is the distance between the midpoints of AB and BC?

- A. 2.4 cm
- B. 2.6 cm
- C. 5.0 cm
- D. 7.6 cm

3

## SPATIAL APTITUDE

Find out which options- A, B, C and D from the Answer Figure has parts that can make the Problem Figure.



4

## VERBAL REASONING

Each sentence has two pairs of words. One word from the second pair is missing. You need to complete the second pair by selecting the correct word from the given options.

\_\_\_\_\_ is to Bird as Monkey is to \_\_\_\_\_

- A. Wings ----- Branch
- B. Crow ----- Mammal
- C. Crow ----- Branch
- D. Wings ----- Mammal

5

## PERCEPTUAL APTITUDE

The question consists of letters, numbers or letter-number combination. The options have same numbers/letters/letter-number combination, but in different order. Only one of these options is exactly same as the question. Select the correct option which contains the same combination as displayed in question.

L7LL77L2

- a. L7LLL772
- b. L7LL7L72
- c. L7L7LL72
- d. L7LL77L2

# NASTA RIGEL

NASTA RIGEL consists of one paper. Details are as follows:

## A. PAPER 1

- Paper Language: English, Hindi or other Regional Languages
- Eligibility: All students of CBSE, ICSE/ISC

Duration (90 minutes)			
Class	Subject	No. of Questions	Total Marks
11 to 12 & Pre graduate & Non-collegiate students	Aptitude & Career Advisory Test	80	80

## ABOUT CSIR - NISTADS

CSIR-NISTADS is one of the constituent laboratories of the Council of Scientific and Industrial Research (CSIR), Under DSIR, Govt. of India, New Delhi. The Institute is devoted to research on policy, policy advisory and provides research support to national S&T agencies on science, technology, society, and innovation challenges.

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## LEARN MORE

T: (91) 9319634387, (91) 7303064387

E: [info@kamp.res.in](mailto:info@kamp.res.in)

W: <http://kamp.nistads.res.in>

## STEPS TO IMPLEMENT KAMP-NASTA FOR Schools

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The enrolment for KAMP – National Assessment of Scientific Temperament and Aptitude (NASTA)-2020 will be open to all the students of classes V<sup>th</sup> - XII<sup>th</sup> studying in schools affiliated to CBSE as well as other State Boards in the country. The implementation of KAMP will be held in schools in following manner:

### ● SCHOOL ENROLLMENT

All schools should enroll online through KAMP website <http://kamp.nistads.res.in> by 30<sup>th</sup> Sep, 2020. Login credentials will be sent to the school on registered E-Mail ID. School Kit (Information Brochure, Student Registration Forms, Detailed Guidelines and other Communication Materials) are available on KAMP website <http://kamp.nistads.res.in>.

### ● KAMP – NODAL OFFICER

Head of School is requested to assign KAMP- NODAL OFFICER (School Principal is Preferable) and submit his/her details on KAMP Portal while School Enrolment. KAMP Nodal Officer shall be responsible to give wide publicity to this initiative amidst students, teachers and parents so as to activate the scientific instinct in students to find solutions to the day-to-day problems. They are requested to persuade every class teacher to motivate students to participate in large numbers.

### ● STUDENT REGISTRATION

The details of participating students will be uploaded by School/Nodal Officer on KAMP Portal through respective school's Login. Required training for the same shall be provided to schools through KAMP support center. Individual student can also register directly through KAMP portal (for registered schools only).

### ● REGISTRATION FEE

Each participating student has to pay total Rs. 400/- "Registration Fee" to his/her school. After deducting Rs. 30/- per student (towards expenditure for conducting examination in their school premises), school has to pay total registration fee (i.e. Rs. 370/- \* number of participating students) through online (Net Banking or Card Payments) or by generating payment deposit slip through school panel to pay through bank Transfer (RTGS/NEFT). In case of direct registration/payment by students, school share (towards expenditure for conducting examination in their school premises) shall be refunded to school after the closure of registrations.

### ● ASSESSMENT/IMPLEMENTATION DETAILS

Preparation tips for students, Syllabus for NASTA, Sample Questions, Exam Conduction Guidelines, Assessment Pattern details can be accessed through <http://kamp.nistads.res.in>. Examination material will be delivered directly to school closer to the date of examination in case of offline mode. Schools may also choose to conduct online examination. Mock assessment facility will be provided under student login.

### ● ASSESSMENT REPORT

Assessment Report will be available online under schools/institutions login. All participants will receive a comprehensive assessment report with an advisory under their respective student's login.

### ● AWARDS, VISITS & CERTIFICATES

All participants will receive a "Certificate of Excellence/Participation" depending on their individual performance. "Certificate of Recognition/Excellence" for KAMP-Nodal Officer, School & Principal will be awarded based on the student's performance. Special awards, National & International Visits for State & National Level achievers. Information related to awards and certificates are available on KAMP website\*.

### ● KAMP – JUNIOR SCIENTIST CLUB (K-JSC)

Each participant will become a member of K-JSC. KJSC will a district level self-sustainable club. District Level Science Meets will be organized every year where young scientists (students) of member schools will showcase their projects. After evaluation by KAMP most promising science projects will be selected for KAMP-NATIONAL SCIENCE CARNIVAL and "National Young Scientist Award" will be presented to students for their contribution in S & T.

For any further information or implementation, write us at [info@kamp.res.in](mailto:info@kamp.res.in) or KAMP Operations and Coordination Office on telephone no. (91) 9319634387, (91) 7303064387