

**NATIONAL OLYMPIAD PROGRAMME
IN
ASTRONOMY, BIOLOGY, CHEMISTRY
AND PHYSICS**

2024-2025

leading to participation in International Olympiads



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**AN INVITATION TO EXPERIENCE THE FUN,
CHALLENGE AND DEPTH OF DOING SCIENCE**

**A major Olympiad programme
in basic sciences
is operational in the country.
The programme aims at promoting
excellence in science among
pre-university students and selecting
teams of students to represent India at the
International Olympiads in Astronomy, Biology,
Chemistry and Physics.**

**This brochure gives the necessary information
regarding this programme to all concerned:
students, teachers, parents and others.**

Do India proud at the International Olympiads 2025.

Enrol for NSEA/NSEB/NSEC/NSEP

Introduction

The international Olympiad movement is aimed at bringing the most talented secondary and higher secondary students of the world together in a friendly competition of the highest level. The Olympiads do not lead directly to any career benefits; rather, they provide a stimulus to begin a career in science or mathematics, to undertake a lifelong journey into the realms of exciting intellectual challenges. The Olympiads are not merely competitions, they are the meeting places of the brightest young minds of the world, and many friendships forged at the Olympiads form the seeds of scientific collaboration later in life. Much like the Olympics in sports, the Olympiads are a celebration of the very best in school level science and mathematics. The Olympiad programmes globally have aimed at not just the international events, but have also served as national channels to enrich school educational curriculum. Even beyond the scope of the examinations, Olympiad problems provide intellectual stimulus and uncommon opportunities for teaching and learning of sciences.

The scientific community of India recognises the need for a national Olympiad programme in mathematics and basic sciences, which would lead to participation in the international Olympiads. India has been participating in the international Olympiads in Mathematics since 1989, and later started participation in Physics (1998), Chemistry (1999), Biology (2000), Astronomy (1999) and Junior Science (2007) as well. Enrolment of students in each subject has grown steadily over time, and currently stands at between 20000 and 60000 in different subjects. The science Olympiad programme involves a large number of teachers and scientists from across the nation. The nodal agency for all the science and mathematics Olympiads in the country is the Homi Bhabha Centre for Science Education (HBCSE), a national centre of the Tata Institute of Fundamental Research (TIFR). The Olympiad programme is run in close collaboration with the teacher associations: the Indian Association of Physics Teachers (IAPT), Association of Chemistry Teachers (ACT), and the Association of Teachers in Biological Sciences (ATBS). The first stage examinations of the Olympiads in Astronomy, Biology, Chemistry and Physics are conducted by IAPT, while the later stages are the responsibility of HBCSE. From 2022, IAPT is in charge of all stages of the Junior Science Olympiad.

The science Olympiad programme is fully funded by the Government of India through the Board of Research in Nuclear Science, Department of Atomic

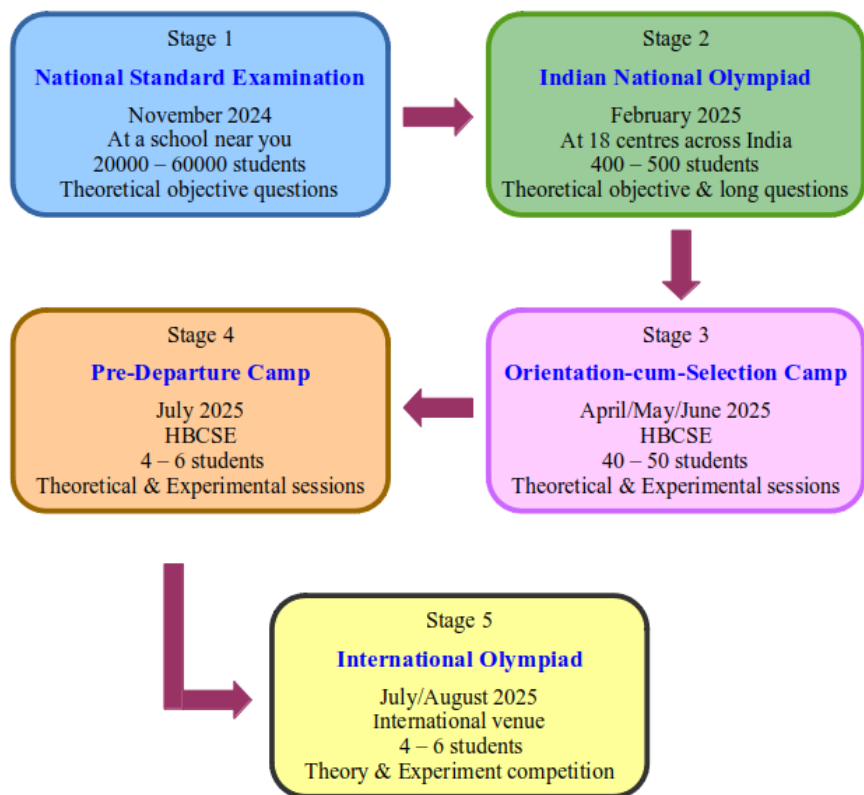
Energy (BRNS, DAE), Department of Science and Technology (DST), Ministry of Education (MoE) and the Indian Space Research Organisation, Department of Space (ISRO, DoS). The national Olympiads are overseen by a National Steering Committee (NSC), constituted by DAE, and comprised of members of each funding agency as well as eminent experts in each subject.

Right from the beginning of participation, Indian students have excelled at the international Olympiads in every subject. More than 99% of the nearly 530 contestants from India have won medals and laurels at the international competitions in the last 25 years of participation. Over one-third of the students have won coveted gold medals, and several special prizes have been won as well. The international community has also recognised India's strong presence at the Olympiads. India has hosted the international Olympiads in every subject: Mathematics (1996), Chemistry (2001), Astronomy (2006 and 2016), Biology (2008), Junior Science (2013) and Physics (2015).

The national Olympiad programme follows a five stage process, starting with an examination held at nearly 1400 schools across the country and culminating with the international Olympiads at different corners of the world. The national level examinations are designed to assess the conceptual understanding, logical reasoning, laboratory skills, and above all, ability to apply problem-solving skills to novel situations, both theoretical and experimental. Training is included from the third stage of the programme and the first two stages do not necessarily require any specialised coaching outside the regular school system. The programme for the year 2024-2025 is outlined in this brochure.



Overview of the Science Olympiads: Five Stages



Stage I National Standard Examinations (NSEs)

National Standard Examinations in Astronomy (NSEA), Biology (NSEB), Chemistry (NSEC) and Physics (NSEP) constitute the first stage of selection of students in the National Olympiad Programme. **Every student aspiring to go through successive stages of the programme and participating in the international Olympiads in 2025 must enrol for the NSEs in the respective subjects to be held in 2024.**

ELIGIBILITY FOR NSE AND SUBSEQUENT STAGES:

A student needs to satisfy all the criteria listed below in order to appear for the NSE in Astronomy, Biology, Chemistry or Physics.

1. Must be eligible to hold an Indian passport.
 - 1a. As per the orders of the Madras High Court, OCI students will NOT be eligible for selection to the Indian team in the International Olympiads. However, such students are provisionally eligible for selection at all prior stages, up to and including the OCSC (stage III), provided they fulfill all other criteria. They are also provisionally eligible to write the selection tests at the OCSC. This policy is subject to revision without prior notice depending on any further orders issued by the courts, or by a competent government authority.
2. Date of birth between 1 July 2005 and 30 June 2010, both days inclusive.
3. Must be residing and studying in India since 30 November 2022 or earlier.

OR

Must be studying in an Indian school system since 30 November 2022 or earlier.

4. Must be studying in Class X, XI, or XII at the time of enrolment.
5. Must not have passed (or scheduled to complete) Class XII board examination earlier than 30 November 2024.
6. Must not have commenced (or planning to commence) studies in a university or equivalent institution by 1 June, 2025.
7. Must not be appearing in National Standard Examination in Junior Science (NSEJS) 2024.

It is the student's responsibility to determine if he/she satisfies the eligibility norms. If at some later stage it is found that the student does not meet the eligibility norms, he/she may face disqualification from the programme.

First stage Examination	Date, Time and Venue of Examination	Question paper pattern	Language	Syllabus
National Standard Examination in Astronomy (NSEA)	November 23, 2024 (Saturday) 14:30 – 16:30 hrs Respective NSE Exam centre	A) 48 multiple choice questions with one alternative correct. +3 marks credit for correct choice. - 1 mark penalty for incorrect choice. B) 12 multiple choice questions with one or more than one correct alternatives. To get credit, all the correct option(s) and incorrect option(s) should be marked.	English & Hindi (option at the time of enrolment)	Is broadly equivalent to senior secondary level (up to and including Class XII) of CBSE. There will be greater emphasis on Physics, Mathematics and elementary Astronomy.
National Standard Examination in Biology (NSEB)	November 24, 2024 (Sunday) 14:30 – 16:30 hrs Respective NSE Exam centre	A) 48 multiple choice questions with one alternative correct. +3 marks credit for correct choice. - 1 mark penalty for incorrect choice. B) 12 multiple choice questions with one or more than one correct alternatives. To get credit, all the correct option(s) and no incorrect option(s) should be marked.	English & Hindi (option at the time of enrolment)	Is broadly equivalent to senior secondary level (up to and including Class XII) of CBSE.

First stage Examination	Date, Time and Venue of Examination	Question paper pattern	Language	Syllabus
National Standard Examination in Chemistry (NSEC)	November 24, 2024 (Sunday) 11:30 – 13:30 hrs Respective NSE Exam centre	A) 48 multiple choice questions with one alternative correct. +3 marks credit for correct choice. -1 mark penalty for incorrect choice. B) 12 multiple choice questions with one or more than one correct alternatives. To get credit, all the correct option(s) and no incorrect option(s) should be marked.	English & Hindi, Gujarati ,Bangla, Tamil & Telugu or any Indian Language provided 300 students OPT for it (option at the time of enrolment)	Is broadly equivalent to senior secondary level (up to and including Class XII) of CBSE.
National Standard Examination in Physics (NSEP)	November 24, 2024 (Sunday) 08:30 – 10:30 hrs Respective NSE exam centre	A) 48 multiple choice questions with one alternative correct. +3 marks credit for correct choice. -1 mark penalty for incorrect choice. B) 12 multiple choice questions with one or more than one correct alternatives. To get credit, all the correct option(s) and no incorrect option(s) should be marked.	English & Hindi, Gujarati ,Bangla, Tamil & Telugu or any Indian Language provided 300 students OPT for it (option at the time of enrolment)	Is broadly equivalent to senior secondary level (up to and including Class XII) of CBSE India.

ENROLMENT FOR NSE:

Enrolment at student's own school/college: A student can enrol for NSE at his/her own institution if it is a registered NSE centre (see below for registration of NSE centres). The principal would be the contact person for this purpose.

Direct Enrolment: If a student's own institution is not a registered NSE centre, it is still possible to participate in NSE by enrolling directly on the IAPT website: www.iapt.org.in.

Enrolment fees: Rs. 300/- per student per subject.

Enrolment dates: 21 August - 14 September, 2024 (check IAPT website)

NSE centre registration: Any state recognised school/college is eligible to become a NSE centre with a minimum enrolment of 20 students, subject to approval by Chief Coordinator, IAPT Examinations. Online NSE centre registration on the IAPT website will be between 1 August and 20 August, 2024.

Contact:

Prof. B. P. Tyagi (Chief Coordinator, IAPT Examinations)
Dr. Anand Singh Rana (NSE Coordinator)
Dr. D. Uthra (NSEJS Coordinator)
15, Block II, Rispana Road,
DBS (PG) College Chowk, Dehradun 248 001
E-mail: iapt.nse@gmail.com
Tel. No: 9632221945 (Mon-Fri: 10.00 to 13.00 and 14.00 to 17.00)

NSEs are the organizational responsibility of IAPT. All queries about NSEA, NSEB, NSEC, NSEJS and NSEP must be addressed to the above mentioned address. **PLEASE DO NOT CONTACT HBCSE IN THIS CONNECTION.**

Stage II Indian National Olympiad Examinations (INOs)

The second stage in the selection process, the Indian National Olympiads in Astronomy (INAO), Biology (INBO), Chemistry (INChO) and Physics (INPhO) will be organized by HBCSE in early 2025. These examinations will be held at about 18 centres in the country. The list of students selected for the INOs according to the criteria given below will be published by January 15, 2025 on the IAPT website: www.iapt.org.in

All students appearing in INOs must register themselves on the HBCSE website (olympiads.hbcse.tifr.res.in) after the publication of the list in order to obtain their INO admit cards. This registration is mandatory for appearing in INO. Failure to register for INO will result in disqualification of the candidate for INO.

The tentative schedule of these examinations is given below. Confirmation of the schedule and all necessary instructions pertaining to the INOs will be available on the same website. As far as possible the National Olympiads in different subjects are held on separate days/times so that a student who is eligible to appear for more than one subject can do so. Students appearing in INOs are eligible for TA/DA as per the norms of the programme.

ELIGIBILITY FOR INO

The aim of the first stage examination is to have a wide reach, to progressively increase this reach and to attain nationwide representation for Stage II without overly compromising on merit. Hence the selection for the Stage II examinations, i.e., Indian National Olympiad Examinations (INOs) is based on the following scheme.

- The student pool of each NSE (NSEA, NSEB, NSEC, NSEP) will be divided into two groups:
 - Group A: Students who are in Class XII as of November 30, 2024
 - Group B: Students who are in Class XI or X as of November 30, 2024
- For Stage II (INO), a minimum target number of N students is set. This number will be $N = 200$ for each of Biology, Chemistry, and Physics, and $N = 250$ for Astronomy for each of the groups A and B above. Thus, a total of minimum 400 students (for INBO/INChO/INPhO) or 500 students (for INAO) will be selected.
- The selection of students for each group will be made according to the clauses (a) to (e) below applied separately to each group. In particular, the

Minimum Admissible Score (MAS) and the Merit Index (MI) will be calculated separately for each group in each subject.

- The syllabus and question papers of NSE 2024 and INO 2025 will be identical for the two groups in each subject.

- (a) **Minimum Admissible Score (MAS) Clause:** To be eligible for the Stage II (INO) exam leading to the International Olympiad, a candidate must secure a score equal to or greater than a Minimum Admissible Score (MAS). The MAS for a given subject will be 50% of the average of the top ten scores in that subject rounded off to the nearest lower integer. This clause shall be a prerequisite for clauses (b) to (e) to be applied for any student.

Examples:

- i. Suppose the average of the top ten scores in NSE in a subject is 92.3; then 50% of that is 46.15. The MAS will be set at 46.
- ii. Suppose the average of the top ten scores in NSE in a subject is 93.5; then 50% of that is 46.75. In this case also the MAS will be set at 46.

- (b) **Merit Index (MI) Clause:** There will be a high score called the Merit Index (MI) associated with each subject in Olympiads. The MI in a subject is defined as 80% of the average of the top ten scores in that subject, rounded off to the nearest lower integer. All students with a score equal to or greater than MI for the subject will automatically qualify for INO in that subject.

Example: Suppose the average of the top ten scores in a certain subject is 92.3, then 80% of that is 73.84. The MI in that subject will be set at 73. All candidates with a score equal to or above 73 in that subject will automatically qualify for INO.

- (c) **Proportional Representation Clause:** Students from all States and UTs need to be encouraged to appear for the first stage examination, and a nationwide representation for the second stage is desirable. A quota for each State/UT, based on the erstwhile National Talent Search Examination (NTSE), will be applied for determining the number (with a minimum of 4) of students qualifying for INO in every subject from schools in that State or UT. This number will include those selected on the basis of the Merit Index (MI Clause (b) above). In the event of a tie at the last position in the list, all students with same marks at this position will qualify to appear for INO. The selected students must nevertheless satisfy the MAS Clause (a).

Examples:

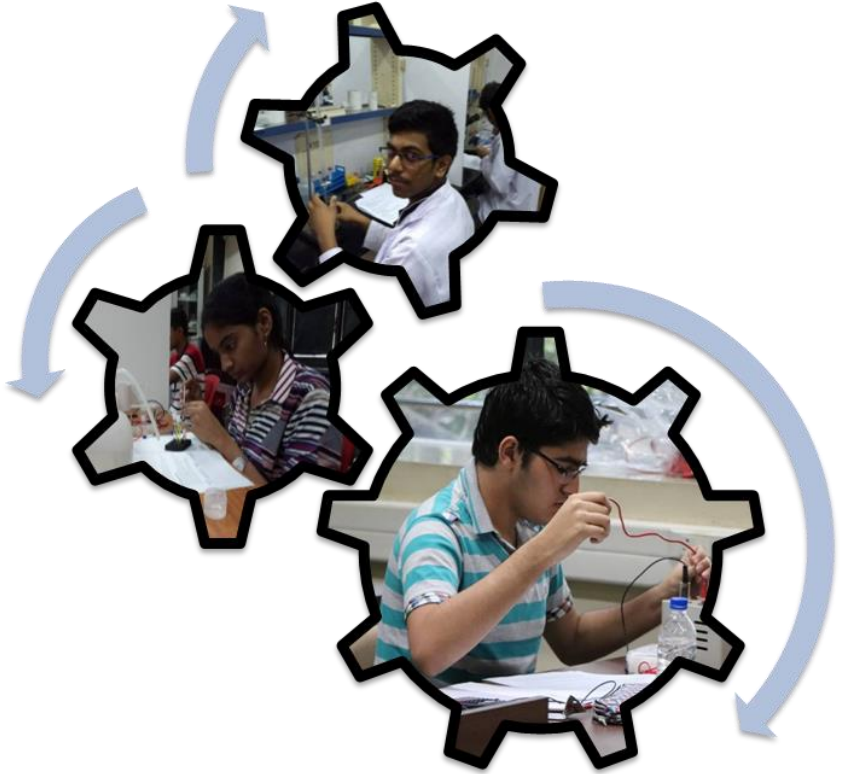
- i. Let the quota on the basis of the Proportional Representation Clause (c) for a State S1 be 20. Suppose the number of students satisfying the Merit Index Clause (b) in a subject is 10. These 10 students will qualify for the INO exam in the given subject and an additional 10 students from the State S1 in the given subject will be selected merit-wise, provided they satisfy the MAS Clause (a).
 - ii. Let the quota on the basis of the Proportional Representation Clause (c) for a State S1 be 20. Suppose the number of students satisfying the Merit Index Clause (b) in a subject is 30. In this case, all 30 students will qualify for the INO exam in the given subject, and there will be no further selection from the State S1.
- (d) **Minimum Total Number Clause:** In each subject, after all the above criteria have been applied, it is possible that the target number of N students to be selected for INO is not reached (due to non-availability of enough number of students in some states who satisfy the MAS Clause (a)). In such an event, additional students will be selected purely merit-wise, provided MAS Clause (a) is satisfied, till the target number of N is reached. Other clauses will not apply for these students. In case of a tie at the last position, all students with the same marks at this position will qualify to appear for the INO Stage II examination.
- (e) **Super-numerary Quota for Female Students Clause:** A super-numerary quota for female students will be applied to ensure that a minimum of 10% of the total number of students selected for INO in each subject are female. The definition of a “female” student shall be as per self-identification of the student explicitly as “female” at the time of NSE registration. The implementation of this quota will be subject to the MAS Clause (a). For each subject, this clause will be applied only if the total number of female students is less than the target quota of 10% after all the above clauses (a) to (d) of qualification from NSE to INO, have been applied. In case this fraction of female students has already been reached through the application of clauses (a) to (d), then this quota will not be applied. If the fraction of female students is less than the target, then additional female students in order of merit, subject to qualification of MAS, but irrespective of region, will be added to the list of qualified students till the target fraction is reached (rounded upwards to the nearest integral number of students). In case there are not enough female students above MAS in a subject, the required number as per this

clause may not be reached, and the shortfall shall not be transferable to any other category or clause.

Example: Suppose that after application of the clauses (a) to (d), the total number of selected students in a subject is 210. Now consider three scenarios:

- i. The number of female students among these 210 is 30. In this case, the quota for female students will not be applied since the target quota of 10% of 210, i.e. 21, has already been reached.
 - ii. The number of female students among these 210 is 15. In this case, the quota needs to be applied since the target of 10% of 210, i.e. 21, has not been reached. Suppose there are 50 female students above MAS who have not yet been selected for INO. Then 7 female students, in order of merit, will be added to the INO list. This takes the total of students to $210+7 = 217$ and the number of female students to $15+7 = 22$, which is the closest integer greater than the target 10% of the total number, i.e. 21.7. Note that 7, and not 6 female students need to be added.
 - iii. The number of female students among these 210 is 15. Again, in this case, the quota needs to be applied since the target of 10% of 210, i.e. 21, has not been reached. However, suppose there are only 5 female students above MAS who have not yet been selected for INO. Then only these 5 students will be added to the INO list, even though the fraction of female students stays at $20/215 = 9.3\%$, which is less than the target of 10%. The MAS Clause (a) does not permit any further addition of female students.
- (f) **Previous International Representation Clause:** Candidates who have represented India in an International Olympiad (IOAA, IBO, IChO, or IPHO) on a previous occasion need not appear for the first stage NSE examination in the respective subject. Candidates who have represented India in the Asian Physics Olympiad (APhO) and the International Olympiad on Astronomy and Astrophysics Olympiad Junior (IOAA-Jr) need not appear for the NSEP and NSEA examinations, respectively. Those candidates who thus qualify to skip the NSEs may be allowed, on written request by email to nc_olympiad@hbcse.tifr.res.in, to directly appear for the Indian National Olympiad (INO) examination (in the respective subject only), provided they satisfy other eligibility criteria such as age, class of study, pre-college status, etc.

There will be no other criterion or provision for selection to the Indian National Olympiad Examinations (INOs).



Second stage Examination	Date & Time of Examination	Venues	Language	Syllabus
Indian National Astronomy Olympiad (INAO)	February 01, 2025 (Saturday) 9:00 – 12:00 hrs	Ahmedabad Bengaluru Bhopal Bhubaneswar Chandigarh Chennai Delhi Guwahati Hyderabad Jaipur Kochi Kolkata Kota Lucknow Mumbai Nagpur Patna Ranchi	English & Hindi	Is broadly equivalent to NSEA
Indian National Chemistry Olympiad (INChO)	February 01, 2025 (Saturday) 13:30 – 16:30 hrs		English & Hindi	Is broadly equivalent to NSEC
Indian National Physics Olympiad (INPhO)	February 02, 2025 (Sunday) 9:00 – 12:00 hrs		English & Hindi	Is broadly equivalent to NSEP
Indian National Biology Olympiad (INBO)	February 02, 2025 (Sunday) 13:30 – 15:30 hrs		English & Hindi	Is broadly equivalent to NSEB

Questions and problems in INOs, while circumscribed by the above mentioned CBSE syllabus, are usually non-conventional and of high difficulty level, comparable to the international Olympiads.

Stage III Orientation-Cum-Selection Camps (OCSCs)

On the basis of performance in the Indian National Olympiads students will be selected in each subject for the Orientation-Cum-Selection Camp (OCSC) in that subject. At these camps, orientation is provided to students for Olympiad level of theoretical, experimental and observational (for astronomy) tasks. Emphasis is laid on developing conceptual foundations and problem-solving skills. Students are exposed to innovative experiments with focus on conceptual and procedural understanding in experimental science. In astronomy, students are trained in basic notions in astrophysics, astronomical data analysis and night sky observations.

Several theoretical and experimental/observational tests are held during the camp. On the basis of performance in these tests, few students (numbers specified below) are selected to represent India at the international Olympiads. These students also receive merit awards in the form of books and cash. In addition, there are special prizes in each subject to recognize meritorious performance in theory and experiments. A camp concludes with a valedictory function where distinguished scientists are invited to speak to the students.

International Olympiad	No of students selected
International Olympiad on Astronomy and Astrophysics (IOAA)	5
International Biology Olympiad (IBO)	4
International Chemistry Olympiad (IChO)	4
International Physics Olympiad (IPhO)	5

SELECTION PROCEDURE FOR OCSCs:

For Biology, Chemistry and Physics, a target number of 20 students from each of Group A and Group B (see above) will be selected, according to order of merit in the respective INO. For Astronomy, a target number of 15 students from Group A and 35 students from Group B will be selected, according to respective order of merit in INAO. Thus, unless declared to be otherwise before the INO examinations, a total of 40 students for each of OCSC-Biology, OCSC-Chemistry, and OCSC-Physics, and 50 students for OCSC-Astronomy will be selected. In the event there is a tie at the last position in the merit list of the respective INO, all students with the same marks at the last position will qualify to be selected for the OCSC.

Selection of the team to represent India in any of the International Olympiads will NOT be based on the above groups, but will be done purely on the basis of a combined merit list of all students attending the OCSC in the respective subject.

The following procedure will be applied for selection of students for OCSCs. **In a given year, a student can participate in the orientation/ training/ selection of only one subject including Mathematics (OCSC for the five science subjects, or International Mathematical Olympiad Training Camp (IMOTC)) according to a preference order decided by the student himself/herself.** A student who qualifies in more than one subject (on the basis of his/her performance in INO or Indian National Mathematical Olympiad (INMO)) will be invited to the OCSC that is ranked highest in his/her preference list. The procedure is as follows:

- **Before INO/INMO:** A student who qualifies to appear in more than one subject in INO/INMO will be asked to arrange the subjects in order of preference of attending the OCSC/IMOTC (and therefore competing for selection in the international team). This preference will have to be indicated during the mandatory registration for INO. This will not affect in any way the evaluation of his/her INO/INMO performance in any subject.
- **After INO/INMO:** A target number of students will be invited to the OCSC camp of each subject. The students in each subject will be assigned a rank according to his/her performance in the respective INO/INMO.

If a student obtains qualifying marks in INO in multiple subjects, he/she will be included only in the OCSC/IMOTC for the subject which figures highest in his/her preference list among the subjects in which he/she has obtained qualifying marks. His/her name will not be considered for OCSC/IMOTC in the other subjects, and the next students in those subjects will be considered, till the target number of students is reached in each subject.

Irrespective of selection or participation in OCSC/IMOTC, the student will receive a Certificate of Merit in every subject in which his/her score is equal to or higher than the score of the last selected student in that subject.

The process of selection is illustrated below in an example with three possible cases. We consider the example of a Group A student, Amita, who has qualified for INO in Astronomy, Physics and Chemistry. Prior to INO, she declares her preference in the order: Physics, Chemistry, Astronomy. In this example, the target number of students in each subject in Group A is 20.

Case 1: Based on her INO performance, Amita is ranked 17th in Physics, 15th in Chemistry and 4th in Astronomy. She will be selected in Physics OCSC and her name will not be included in Chemistry or Astronomy OCSCs. As a result, all the students ranked below her in Chemistry and Astronomy will gain one rank while being considered for OCSC selection. Amita will receive a certificate of merit in all three subjects.

Case 2: Amita is ranked 80th in Physics, 15th in Chemistry and 4th in Astronomy. She is unlikely to be selected for Physics OCSC because her rank is too low to be upgraded to higher than 20. She will now be selected in Chemistry OCSC, and not for Astronomy. She will receive a certificate of merit in Chemistry and Astronomy.

Case 3: Amita is ranked 22nd in Physics, 15th in Chemistry and 4th in Astronomy. She is initially not eligible for Physics, but has qualified for Chemistry and Astronomy. However, it so happens that two students ranked above her in Physics get selected in some other subject based on their preferences. Since their names are now removed from the Physics list, Amita's rank goes up to 20, and she becomes eligible for Physics which is her first preference. Therefore, she gets selected in Physics, and not in Chemistry or Astronomy. She will receive a certificate of merit in all three subjects.



SCHEDULE OF OCSC:

The OCSC dates will be announced on HBCSE website (olympiads.hbcse.tifr.res.in) by January 15, 2025.

To the extent possible, care is taken that the camp dates do not overlap with the national level competitive exams, (e.g. IIT-JEE or NEET). Students are advised to select Mumbai as their examination centre of any national level entrance examination that might be scheduled during the OCSC period.

The selection of the members of the Indian teams (IOAA, IBO, IChO and IPhO) holds provided they satisfy required criteria such as age limit, pre-university status, medical fitness, parental/ guardian consent, etc. In addition, by the beginning of the OCSC they must hold an Indian passport that is valid till at least six months beyond the dates of the respective international Olympiad.

The decisions of the examination committees of the INOs and OCSCs in the various subjects regarding selection of international team, special merit awardees and other awardees will be treated as final.



Stage IV Training of Indian teams for International Olympiads at HBCSE

The selected Indian teams undergo a rigorous training programme at HBCSE in theory and experiment and in case of astronomy, observational astronomy prior to their departure for the international Olympiads. Special laboratories have been developed in HBCSE for this purpose. Resource persons from different institutions across the country are invited to the training camps. The maximum period of training may be limited in some subjects as per the statutes of the respective international Olympiads.

Stage V Participation in International Olympiads

The Indian team of students are accompanied by Leaders and Scientific Observers to the Olympiad event at an international venue.

Subject	Team Composition	Venue	Month
Physics (55 th IPhO)	5 Students 2 Teacher Leaders	France	July 2025
Chemistry (57 th IChO)	4 Students 2 Teacher Leaders	United Arab Emirates	July 2025
Biology (36 th IBO)	4 Students 2 Teacher Leaders	Quezon City, Philippines	July 2025
Astronomy & Astrophysics (18 th IOAA)	5 Students 2 Teacher Leaders	Mumbai, India	August 2025

[Each team may be accompanied by a number of Scientific Observers.]

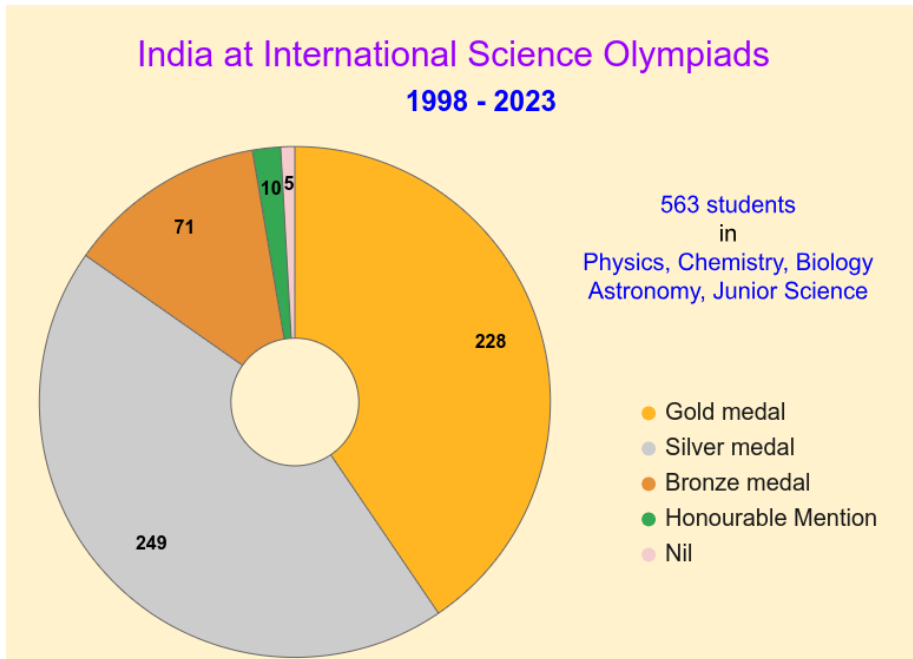
Teacher participation in National Olympiad programme

A large number of secondary, higher secondary and undergraduate teachers from all over India are involved in the national Olympiad programme. Many of them are invited to Resource Generation Camps (RGCs) at HBCSE throughout the year. Exposure camps are also organised at HBCSE to orient teachers to the academic and organisational aspects of the Olympiads. Usually these camps are held in the second half of the calendar year. Teachers are encouraged to keep an eye on our website for participation in exposure camps.



Indian performance in International Science Olympiads

Indian students have excelled at all the international science Olympiads ever since participation started in 1998. Almost every student has won a gold, silver, bronze medal or an honourable mention. Over the years several Indian students have also won special awards for best performances in theoretical or experimental components.



Olympiads: An Inspiration for a Career in Science

The unique experience of the Olympiads inspires young students to continue their fascinating journey with science. Most of our past Olympiad students have chosen academic careers and several of them are today among the faculty at reputed universities and research institutions in India and abroad. Many more are currently pursuing research careers in various disciplines of science and engineering. Here is a small sample.



Note on other Olympiads

- **International Mathematical Olympiad (IMO):**

HBCSE is also a nodal centre for the Mathematical Olympiad. The details of selection to this Olympiad maybe found in a separate brochure and also on the HBCSE website: olympiads.hbcse.tifr.res.in

We mention below a few other recognized international Olympiads in science disciplines but participation in them is not directly organized by HBCSE.

- **International Junior Science Olympiad (IJSO):** Participation is organized by IAPT. Students aspiring for this Olympiad must normally appear in the first stage NSEJS exam followed by the second stage INJSO exam. The details of further selection and training are decided by IAPT and you may consult their website (jso.indapt.org.in).
- **Asian Physics Olympiad (APhO):** Participation is organized by IAPT. Students aspiring for this Olympiad must normally appear in the first stage NSEP exam followed by the second stage INPhO exam. The details of further selection and training are decided by IAPT and you may consult their website (www.iapt.org.in).
- **International Olympiad on Astronomy and Astrophysics - Junior (IOAA - Junior):** Participation is organized by the National Council of Science Museums (NCSM). Students aspiring for this Olympiad must normally appear in the first stage NSEJS exam. The details of further selection and training are decided by NCSM and you may consult their website (www.nehrusciencescentre.gov.in).
- **International Earth Science Olympiad (IESO):** Participation is organized by the Geological Society of India and you may consult their website for more information (<http://www.geosocindia.org>).
- **International Olympiad in Informatics (IOI):** Participation is organized by the Indian Association for Research in Computing Science and you may consult their website for more information (<http://www.iarcs.org.in/inoi>).

We caution the students and teachers about numerous private examinations titled 'Olympiads', which may charge high fees, are not officially recognized by the Government of India and which do not lead to participation in the International Olympiads.

Queries and Grievances

All queries regarding Stage I examinations (NSEs) should be addressed to IAPT (Prof. B. P. Tyagi - see page 8).

For general queries regarding Astronomy, Biology, Chemistry, Physics Olympiad programmes you may contact:

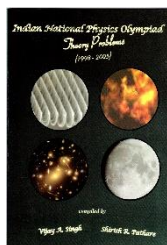
Prof. Anwesh Mazumdar
National Coordinator, Science Olympiads
Homi Bhabha Centre for Science Education (TIFR),
V. N. Purav Marg, Mankhurd, Mumbai 400 088
Tel: 022-2507 2322; 022-2548 2104; 022-2558 0036;
Fax: 022-2556 6635, 022-2556 6803
Email: nc_olympiad@hbcse.tifr.res.in

For more information, visit the website: olympiads.hbcse.tifr.res.in

The courts at Mumbai alone shall have the jurisdiction to settle and decide all matters and disputes related to the Olympiads organised by HBCSE and Examinations from Indian National Olympiad (INO) and onwards as HBCSE is the Nodal Organising Institute for this programme.

Information in this brochure is subject to revision in the event of unforeseen circumstances.

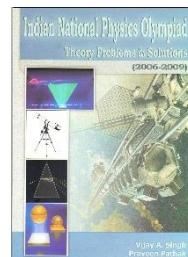
Olympiad Books published by HBCSE



Indian National Physics Olympiad - Theory Problems (1998 - 2005), *Vijay A. Singh* and *Shirish R. Pathare*. **Price Rs. 50/-** (Purchase in person from HBCSE) or by sending **by post for Rs. 90/-**

Indian National Physics Olympiad - Theory Problems and Solutions (2006 – 2009), *Vijay A. Singh* and *Praveen Pathak*. Available for download from:

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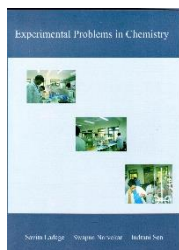
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Available for download from:

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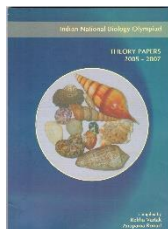
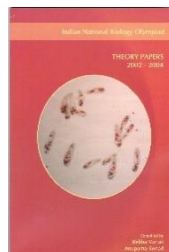
<http://chem.hbcse.tifr.res.in/indian-national-chemistry-olympiad-2002-2007>



Experimental Problems in Chemistry, *Savita Ladage*, *Swapna Narvekar* and *Indrani Sen*.

<http://chem.hbcse.tifr.res.in/wp-content/uploads/2019/05/Experimental-problems-in-Chemistry-2003-2007.pdf>

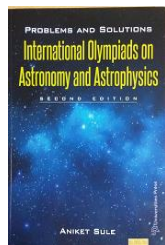
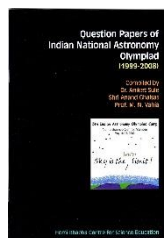
Indian National Biology Olympiad -Theory Papers (2002-2004), *Rekha Vartak and Anupama Ronad*. **Price Rs. 90/-** (Purchase in person from HBCSE) or by sending **by post for Rs. 140/-**



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<https://olympiads.hbcse.tifr.res.in/bio-theory-2005-2007/>

Question Papers of Indian National Astronomy Olympiad (1999- 2008) Aniket Sule, Anand Ghaisas and M. N. Vahia, Manovikas Prakashan. **Price Rs. 100/-** (Purchase in person from HBCSE) or by sending **by post for Rs. 150/-**



Problems and Solutions of International Olympiad on Astronomy and Astrophysics (2007 -2014), Editor: Dr. Aniket Sule, Universities Press India Pvt. Ltd, **Price Rs. 450/-** (Purchase in person from HBCSE) or by sending **by post for Rs. 500**

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INDIAN DELEGATION
16th International Olympiad on Astronomy and Astrophysics 2023
at Chorzów, Poland



From left to right: Mr. Pritesh Ranadive (Leader), Prof. Bhaswati Mookerjee (Scientific Observer), Koduru Tejeswar (Student - Gold), Rajdeep Mishra (Student - Gold), Md. Sahil Akhtar (Student - Gold), Sainavaneet Mukund (Student - Silver), Akarsh Raj Sahay (Student - Gold), Prof. Surhud More (Leader), Mr. Anindya De (Scientific Observer).

INDIAN DELEGATION
34th International Biology Olympiad 2023
at Al Ain, UAE



From left to right: Dr. V. V. Binoy (Scientific Observer), Dr. Anupama Ronad (Leader), Ishan Pednekar (Student - Gold), Dhruv Advani (Student - Gold), Rohit Panda (Student - Gold), Megh Chhabda (Student - Gold), Prof. Madan M. Chaturvedi (Leader), Dr. Rambhadur Subedi (Scientific Observer).

INDIAN DELEGATION
55th International Chemistry Olympiad 2023
at Zurich, Switzerland



From left to right: Prof. N. Manoj (Mentor), Dr. Shraeddha Tiwari (Scientific Observer), Avaneesh Bansal (Student - Silver), Krish Srivastava (Student - Gold), Malay Kedia (Student - Silver), Aditi Singh (Student – Silver), Prof. Gulshanara Shaikh (Scientific Observer), Prof. Anupa Kumbhar (Head Mentor).

INDIAN DELEGATION
53rd International Physics Olympiad 2023
at Tokyo, Japan



From left to right: Dr. Leena Joshi (Leader), Prof. Anwesh Mazumdar (Scientific Observer), Raghav Goyal (Student - Silver), Rhythm Kedia (Student - Silver), Mehul Borad (Student - Gold), Dhruv Shah (Student - Gold), Aditya (Student - Gold), Dr. Shirish Pathare (Scientific Observer), Prof. Arun V. Kulkarni (Leader).

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18th International Olympiad
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