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JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

# Annual Report

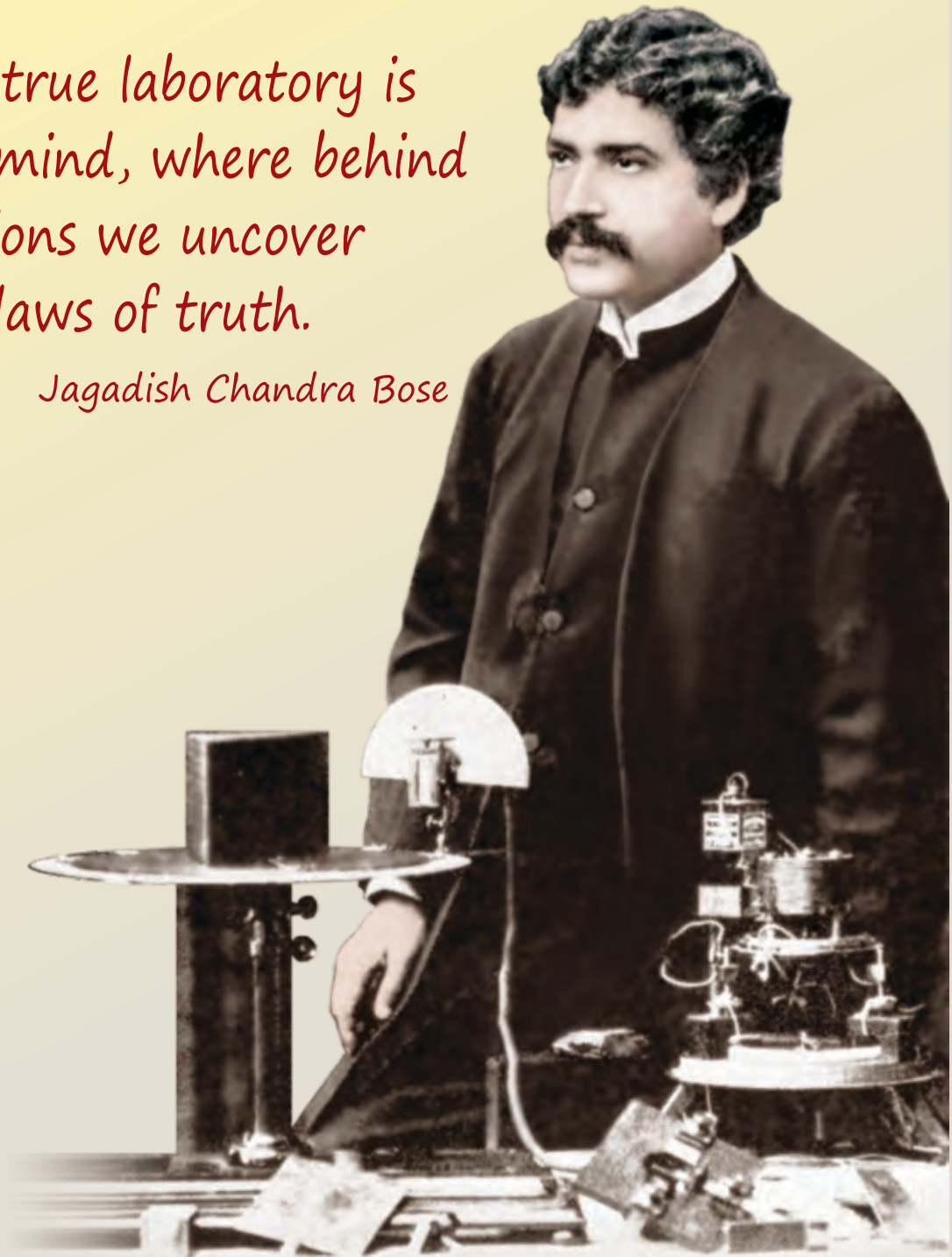
## 2019



IN PURSUIT OF  
EXCELLENCE  
SINCE 1960

*The true laboratory is  
the mind, where behind  
illusions we uncover  
the laws of truth.*

*Jagadish Chandra Bose*





## MEMBERS OF THE GOVERNING BODY OF JBNSTS

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Director and Member-Secretary Ex-officio, JBNSTS  
1300 Rajdanga Main Road, Kasba, Kolkata 700 107

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মমতা ব্যানার্জী  
মমতা বৈনর্জী  
ممتا بنرجی

Mamata Banerjee



মুখ্যমন্ত্রী, পশ্চিমবঙ্গ  
मुख्यमंत्री, पश्चिम बंगाल  
وزیر اعلیٰ مغربی بنگال

CHIEF MINISTER, WEST BENGAL

6<sup>th</sup> December, 2019

MESSAGE

I am happy to know that **Jagadis Bose National Science Talent Search (JBNSTS)** will be organizing their **Annual Award Ceremony** on 21<sup>st</sup> December, 2019 at Derozio Hall, Presidency University, Kolkata,

I wish the event success and convey my heartiest greetings and best wishes to the organizers on the occasion.

(Mamata Banerjee)

Prof. Maitree Bhattacharyya  
Director  
Jagadis Bose National Science Talent Search (JBNSTS)  
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Take up one idea. Make that one idea your life - think of it, dream of it, live on that idea. Let the brain, muscles, nerves, every part of your body, be full of that idea, and just leave every other idea alone. This is the way to success-

**Swami Vivekananda**

## Chairman's message to the new Awardees



It gives me great pleasure that today JBNSTS will bring to its fold new Awardees. Welcome young friends! All of you have gone through a very rigorous set of tests and interviews. You have been chosen because your superior talent and abilities distinguish you from the others. You have capabilities which few possess. The country needs talents like you. We have high expectations. I am confident that just as many previous awardees have done, you too will excel in your chosen area and make the country proud.

Over the years JBNSTS has widened its activity to many programmes ranging from organising science camps for high-ranking school students, non-formal training methods, laboratory training for the young, etc, while keeping full focus on its primary role of identifying talent and nurturing them. In all of this, there has been continuous support from the Government of West Bengal. Under an inspiring leadership JBNSTS has set for itself the highest standards and established itself as a catalyst for scientific excellence. It is recognised as a very efficient talent-spotter and a large number of promising students have been nurtured through its programmes to scale great heights.

In the years ahead we expect that JBNSTS through its efforts will be able to spot the high-quality students from relatively remote areas of the state who often lack the right facilities and exposure. Through programmes such as the JB Bigyani Kanya Medha Britti JBNSTS will motivate a larger number of talented female students to take up science as a career. India has a great demographic advantage. It is our responsibility to identify and encourage future innovators among them so that the country can forge ahead.



**Prof. (Dr.) Amitava Raychaudhuri**  
Chairman, JBNSTS

“Try not to become a man of success,  
but rather try to become a man of value.”

– **Albert Einstein**



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## From the Director's Desk



**R**espected Chairman, Distinguished guests, members of the Governing Body, dignitaries on the dais, our scholars and awardees, students, guardians, my colleagues at different schools, colleges and universities and institutions, my colleagues at JBNSTS, ladies and gentlemen

Once again we all are present here in this Annual Award Ceremony at the end of 2019. Although, this is an annual programme ritually done at the end of each year, but to me it still remains an exciting event even after five years of my association with JBNSTS as Director to face so many talented and meritorious students of our State at a time along with their proud parents and guardians. I am really happy to present before you the activities carried out during last one year after the last Award Ceremony. I want to recall that five years back, we at JBNSTS decided a conscious decision to comprehend our strengths and weaknesses at that time and based on an objective analysis so as to explore new areas for expansion and to bring more teachers and students within the realm of JBNSTS, building up strong networks with other agencies, institutions and professional bodies so that the mission of JBNSTS can be pursued in association and with the help and support of other institutions also. I believe we have been able to achieve a commendable success in this endeavour. I am happy to announce that we have not only made our beloved institution to reach in nook and corner of our State, but many national and international reputed organisation are now keen to develop working relationship with JBNSTS.

In this illuminating journey, we would like to acknowledge all kinds of help, support, and encouragement that we have been constantly receiving from our Hon'ble Chief Minister throughout this period. As a mentor and guardian of our organisation, she always keeps a keen watch on the development of this organisation and encourages us to achieve more in this journey. Whatever we have achieved and progressed during last five years was due to her constant inspiration which only gives us the courage to take up newer challenges in our day to day activities.



We would also like to gratefully acknowledge the help and support that we have been receiving constantly from Department of Higher Education, Government of West Bengal. We are also indebted to Department of Science and Technology and Biotechnology, Government of West Bengal for their constant support and financial assistance to our activities. During this period our grant-in-aid has been increased by almost three fold which has helped us to make this progress.

'Senior Talent Search Test', popularly known as STST, is perhaps the oldest talent search test being conducted in our country and has been continuing since 1960. It is a three step examination – written, Viva-voce and Creativity. Students who have passed the 12<sup>th</sup> Standard examination with science can apply. This year, this examination was conducted during August to October. Through this rigorous process of screening, altogether 58 number of scholars have been identified. Altogether 8 number of these scholars are pursuing the basic science curricula in different colleges and institutions and rest 34 numbers of scholars are from Engineering and 16 number of scholars are from medical discipline.

As a recognition to the STST at the national level, all the Senior Scholars from basic science disciplines used to get their scholarships from the INSPIRE programme of Ministry of Science & Technology, Government of India. Here I want to mention that unfortunately, since last year, Government of India has restricted the scope of INSPIRE programme to a large extent and under this changed policy, though JBNSTS scholars are eligible to be covered under INSPIRE programme, but we are not sure whether all of them will be provided with scholarship. However, we are trying to explore different resources to meet up the expenditures regarding the scholarship of these scholars. Apart from this, all senior scholarships and book grants are sponsored by Department of Science and Technology and Biotechnology, Government of West Bengal.

It is a reality that participation of girls and women in the field of basic science is still not encouraging in India. In order to overcome this problem and from the viewpoint of inclusive development of the Society, JBNSTS introduced a new scholarship "Bigyani Kanya Medha Briti" from the year 2017 to encourage girl students who are pursuing basic science in their graduation. 50 girl students, who have fared well in the STST examination, but cannot reach to the final list of awardees, will be encouraged with this scholarship of Rs. 2,000/- per month. Our experiences of last three years had pointed out that this programme is very much successful. West Bengal is perhaps the only State where the girl students are awarded scholarships for pursuing their carrier in Science. Fund for this is being provided by Department of Science and Technology and Biotechnology, Government of West Bengal .

Top ten boys and top ten girls from the senior scholars are being encouraged with a laptop along with licensed software for pursuing their future carrier and to encourage them to the world of science through web access. Fund for this has been provided by Department of Science and Technology and Biotechnology, Government of West Bengal

Curiosity in a student can only ignite the passion for science. Our main focus at JBNSTS is to nurture this curiosity within the young talents. After a gap of one year, this year we were able to make study tours for the Senior Scholars of two years namely 2017 and 2018 combined for visit to some of the best laboratories of our country, located in Bengaluru. Eminent scientists of these laboratories participated in discussions with our senior scholars. We are grateful to Department of Science and Technology and Biotechnology, Government of West Bengal, for financial support for this programme. Two night sky watching camps were also organised – one at Deulpark, Birbhum District and other at Kaikhali, South 24-parganas District for our senior scholars.



With the objective of “Catch Them Young”, Junior Talent Search Test (JTST) was introduced in the year 2015 for the students who have passed the class X examination and now are in 11<sup>th</sup> Standard. This is a two-step examination process – written and interview through which 233 number of talented students have been considered for awarding scholarship, out of which 203 number of scholars would be provided with financial assistance to pursue their studies. In addition, 51 numbers of students who have fared well in the selection tests, but could not reach the cut-off mark have been selected for encouragement award. The fund for this programme has been provided by Department of Science and Technology and Biotechnology, Government of West Bengal.

I congratulate all these young talents who have achieved these successes. This success also brings to you a new responsibility and challenge to build up your own career in the coming days. You have to engage yourself in further learning since there is no limit to knowledge. JBNSTS will be always with you in your pursuit of knowledge, which can enrich the global science platform.

We at JBNSTS always try our best to nurture these young talents in the best ways possible within the limits of our resources including human resources by organising different nurturing sessions and camps. Eminent scientists, social scientists, technologists and intellectuals even from different fields of life, specialised organisations etc. participate in these nurturing camps as experts. Like previous year, this year also we organised 5-day nurturing camp for the Junior Scholars in collaboration with IISER, Kolkata. We are especially grateful to Dr Saurav Pal, Director, IISER, Kolkata for making all the arrangements including accommodations of all the scholars and mentor group in their campus. We are grateful to the authorities of the schools of these students for allowing the students to attend these camps.

JBNSTS is now having a partnership with Royal Society of Chemistry for nurturing the young talents covering a large number of schools. I am happy to inform you that one such three-day Salter's camp is going to be organised jointly with RSC and IISER, Kolkata during 29-31<sup>st</sup> December, 2019.

We are also able to organise one INSPIRE camp this year with the funding from Department of Science and Technology, Government of India. Unfortunately, funding for organising the INSPIRE camp from Government of India is getting decreased day by day. Even after our best efforts and persuasion, nowadays we are not getting funding for organising the INSPIRE camps, although JBNSTS is pioneer in organising INSPIRE camps in our country and has already organised 60 such camps.

School Teachers play the most important role for science education since they can only inculcate a scientific way of life and ignite the hunger for knowledge among the students. JBNSTS is having an excellent network with the teaching community, especially at the school level. It has been observed that once the school teachers enter into their services, there is hardly any scope for them for updating their own knowledge. There should be some avenues and ways so that the teachers can also brush up their knowledge with new techniques and newer methods of science teaching. Keeping this in mind, JBNSTS has been organising 3-day Teachers' Training Camp at its campus. This year also, we were able to organise such of workshops, which are very effective in developing motivation and imparting skills of science education among the science teachers of our State. This programme is supported by Department of Science and Technology and Biotechnology, Government of West Bengal.

West Bengal District School Scheme is a continuous programme in which we take up a number of schools from few districts for one year and nurture the middle school students belonging to class VIII and IX throughout the year by organising series of training workshops of five days duration. Secondary



schools from remote areas and backward areas are normally selected. This year, we have covered 15(fifteen) schools of East Midnapore, West Midnapore, Hooghly, and Murshidabad Districts. This programme is supported by Department of Higher Education, Government of West Bengal.

Like the previous years, this year also JBNSTS was co-organiser for organising State Level Youth Science Fair and successfully organised "Meet the Scientists" programme during the fair at Netaji Indoor Stadium.

For creating a condition of learning, we were trying to develop a creative corner where the students can repeat the experiments made by twelve Nobel Laureates of different fields in the process of making their innovations which were ultimately recognised through their Nobel Prizes. That work has been completed and students from different corners of our State are now carrying out those experiments during the nurturing camps. Some of these models were also displayed by our scientists in State Science Fair drawing appreciations from the students and teachers participating in that fair.

The workshops on Biotechnology and practical classes are regularly being carried out using the Biotechnology Laboratory augmented about two years back where the students from different schools regularly participate. We are excited to inform, that some new bacterial strains have been identified in our laboratory, which have been inventorised at NCBI and work is going on to explore their activities. This particular programme gets funding from Department of Science and Technology and Biotechnology, Government of West Bengal.

We are expecting to complete the construction of our new building within next one year so that we can add further space for expanding our activities. JBNSTS is in service to cater the quest for science and technology for the meritorious students belonging to not only our State but also for other parts of our Country also. We are now working with KVPY (Kishore Vaigyanik Protsahan Yojana) also in this regard.

I am happy to inform you that we were able to keep the pace of all round development of JBNSTS during last year also. However, we are not complacent at all. There are many things to do which can build up a strong nation based on scientific culture and temperament. Whatever has so far been done is definitely good, but we need more ideas, thoughts and more activities. I request all our friends, colleagues in different universities and academic institutions as also our scholars to come forward with innovative ideas and suggestions and participate more actively in different programmes of JBNSTS in the coming days.

**Let there be rays of science and scientific temper in all spheres of our life and Society...**

Thank you all!!!

**Prof. Maitree Bhattacharyya**  
Director, JBNSTS

## VISION

Identify, Motivate and Nurture to develop the world's brightest minds

## MISSION STATEMENT

To see every talented student of science realize their potential and to harness their talent for nation building

To convey the joy of learning science amongst high ability students and to create innovative learning environments for them.

To build up human resource in applied and basic sciences to produce future leaders in science and technology.

## OUR ACTIVITIES

- The JBNSTS Senior Talent Search Test
- The JBNSTS Junior Talent Search Test
- Bigyani Kanya Medha Britti
- The JBNSTS District Schools Program
- The JBNSTS Teacher Training Program
- Scholars' Nurture Program
- JBNSTS-DST-INSPIRE Science Camps
- Biotechnology workshop for students
- Research and Innovation



Dr. Paromita Roy



Prof. (Dr.) Maitree Bhattacharyya



Mr. Joydip Das



Dr. Abhijit Kar



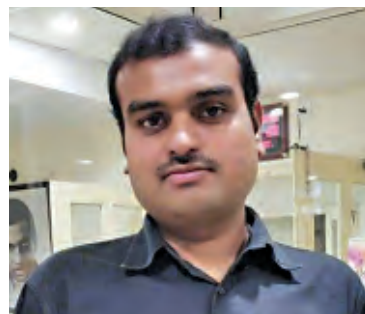
## OUR JBNSTS TEAM



Dr. Smarajit Manna



Mr. Dipankar Sarkar



Mr. Sanjay Dutta



Mr. Prasenjit Chakraborty



Mr. Raja Das



Ms. Swapna Dey



Mr. Sougata Ray



Mr. Ranjit Kr. Mallick



Ms. Puspa Biswas



Ms. Sanchari Chattopadhyay



Mr. Sudip Nag



Mr. Puskar Naskar



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## OUR JBNSTS TEAM



Ms. Sweta Chakraborty



Ms. Paromita Majumdar



Mr. Debnarayan Mukherjee



Dr. Ritupama De



Mr. Debmalya Chowdhury



Mr. Mahadev Das



Dr. Arnab Pramanik



Dr. Pijush Basak



Ms. Shrayasi Chatterjee



Mr. Sudip Das



Mr. Sukanta Manna





# JBNSTS SENIOR SCHOLARSHIP PROGRAM

Illustrious and acclaimed  
program during last sixty  
years – India's first talent  
search test



## SENIOR TALENT SEARCH TEST

Our flagship initiative for talented minds

### Origin of JBNSTS-Senior Scholarship Test

Science education on a larger sense denotes acquiring knowledge and competence to excel in life by being the backbone of human existence and solving real life problems of the society. JBNSTS was established on the cornerstones of identification, motivation and nurturing of talents with a vision of shaping the destiny of the nation through the trajectory of science and technology.

Senior Scholarship Program is an acclaimed initiative of JBNSTS to motivate the young students who are on the threshold of higher education in science. This dynamic initiative has received enormous recognition from all over India since inception in the year 1960. The program has been formulated to recognize, encourage and nourish the undergraduate students studying Basic Sciences, Engineering and Medicine in the recognized institutions of West Bengal. It is worthwhile to mention that DST, Govt. of India has recognised the JBNSTS Senior Talent Search Test by awarding INSPIRE fellowship to the senior scholars who pursue undergraduate studies in Basic Science in West Bengal.

### Objectives of Senior Scholarship Program

- Exposure of brilliant minds to recent trends of cutting-edge research.
- Providing financial support to facilitate the academic pursuits of the talented scholars of our state.
- Several nurturing programs/ workshops for the scholars all throughout the year to stimulate the talented minds into the sphere of innovation and inculcate an enduring scientific temper amongst them.
- The Senior Scholarship Program aims to create future resource base of India in the domain of Basic Science, technology and medicine.

### Scheme and pattern of the examination

The Senior Scholarship Program encompasses a multiphase selection process to adjudge the best merit pool efficient to contribute their innovative input in development of the nation through research activities.

### Eligibility criteria for Senior Talent Search Test 2019

The students applying for the scholarship must have passed from any Government recognized Board (WBCHSE / ISC / CBSE) 10+2 level and aspired to study Engineering / Medical / Basic Science in undergraduate level in West Bengal in 2019.

Finally the students who qualify in the SCT are identified as JBNSTS scholars.

## Mode of Application

Applications are available for the candidates in both online and offline mode from JBNSTS during the month of June and July of every year.

## Stages of examination

<b>Stage I : Written Test</b> <b>Full Marks 100</b>	In this phase the keystone concept in physics, Chemistry, Mathematics and Biology and aptitude of the students are adjudged. From this phase a selected number of students qualify for the following interview session.
<b>Stage II : Interview</b> <b>Full Marks: 100</b>	It is face to face interaction through which the scientific insight, approach and passion towards science and research are gauged before a board of experts of wide spectrum.
<b>Stage III : Scientific Creativity Test</b> <b>Full Marks 100</b>	This is basically a kind of open book test where the candidates are given a problem to solve. They can access JBNSTS library books, journals, papers overnight and their text books but no electronic gadgets are allowed throughout this session. In this phase the comprehensive capability of scientific problems as well as the creative approach of the students are evaluated.

## Benefits under framework of Senior Scholarship by JBNSTS

- A scholar is awarded with Rs. 4000 (four thousand) as scholarship grant in addition with Rs. 5000 (five thousand) at a time as annual book grant until the completion of their degree in engineering or medicine post higher secondary. The scholarship is funded by Department of Science and Technology & Biotechnology, Government of West Bengal. It is to be mentioned that a student availing the benefits of a scholarship from any other sources, however, is not eligible for this scholarship.
- A scholarship and research grant worth Rs. 80,000 (Rs. 60,000 + Rs. 20,000) per annum is awarded to the scholars till completion of Masters Degree for Basic Science (as per DST INSPIRE norms, Government of India).
- Furthermore, the scholars are assigned to perform short-termed pioneering projects post

**IMAGINATION IS MORE IMPORTANT THAN KNOWLEDGE. KNOWLEDGE IS LIMITED BUT IMAGINATION ENCIRCLES THE WORLD.**

Albert Einstein

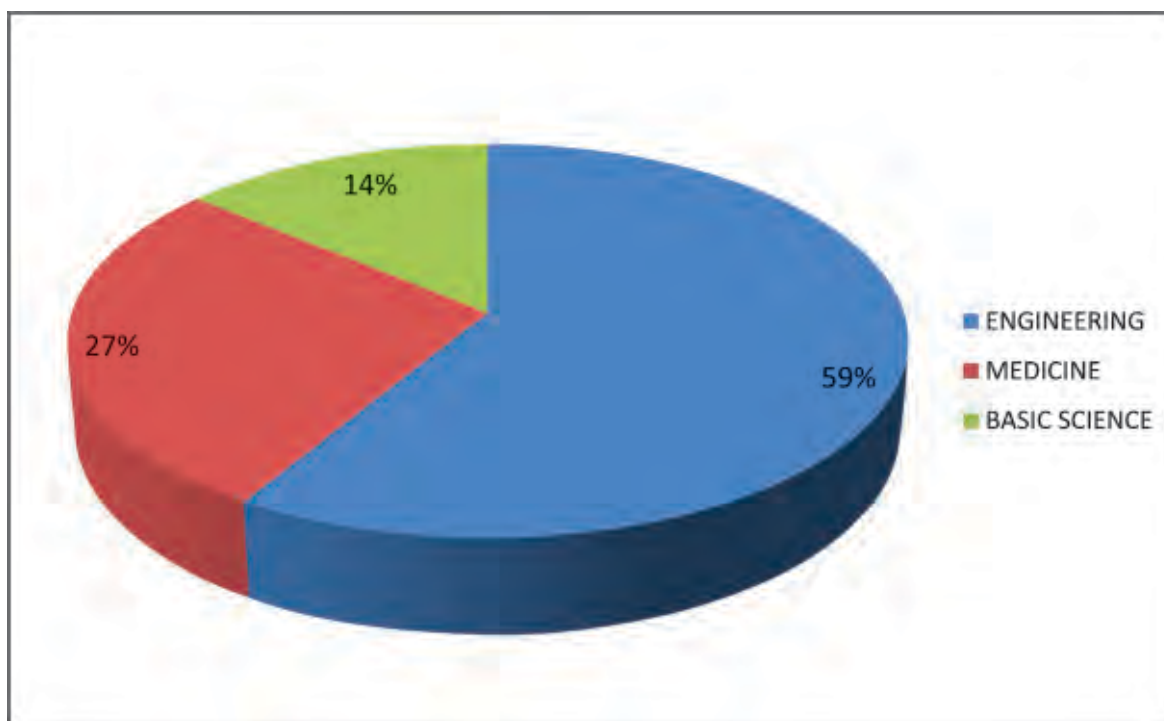
## Special award for top ten

Following the academic needs, JBNSTS awards Laptops to top ten boy scholars and top ten girl scholars according to final merit list. This gesture is financially backed up by the department of Science and Technology & Biotechnology, Government of West Bengal.

## STST 2019: At a glance

Phase of Exam	Written Test	Interview	Scientific Creativity Test	Publication of result
Date	25.08.2019	21.09.2019 and 22.09.2019	01.11.2019 to 03.11.2019	27.11.2019
No. of students	1108	333	131	58

## Distribution of Senior Scholars 2019 based on their present stream of study



**Best School Award 2019:** This year South Point High School, Kolkata was adjudged with the award for best school in the Senior Scholarship category with regard to the most number of scholars passing from that institution. The award comes in the form of trophy along with Library Grant amounting to Rs. 10,000.

**JBNSTS SENIOR SCHOLARS, 2019 (Rank wise, from left to right)**



**AKSHAT SINGH RATHORE**  
Computer Science and Engg.  
Indian Institute of Technology -  
Kharagpur



**SOUMITA HAIT**  
Computer Science and Engineering  
Indian Institute of Technology -  
Kharagpur



**SHREYA BISWAS**  
Electronics and Telecommunication  
Jadavpur University



**DEBOPAM SIL**  
MBBS  
Medical College and Hospital



**ARKA CHOUDHURI**  
Computer Science and Engg.  
Jadavpur University



**DEBADRITHA ROY**  
Computer Science and Engg.  
Jadavpur University



**OINDRILA HALDAR**  
Electrical Engg.  
Jadavpur University



**SUNANDA MANDAL**  
Computer Science & Engineering  
Indian Institute of Technology -  
Kharagpur



**ANURAT BHATTACHARYA**  
Instrumentation Engg.  
Indian Institute of Technology -  
Kharagpur



**AHAN BASU**  
Electrical Engineering  
Jadavpur University



**SAYANTAN SAHA**  
Computer Science and Engineering  
Indian Institute of Technology,  
Kharagpur



**ARPAN BANERJEE**  
BS-MS (INT.)  
Indian Association for the Cultivation  
of Science



**MAYUKH RAYCHAUDHURI**  
Metallurgy and Materials Science  
Indian Institute of Technology, Kharagpur



**ARIJIT SAHA**  
Electronics and Telecommunication Engg.  
Jadavpur University



**UTSAV THAKUR**  
MBBS  
Medical College , Kolkata



**SOUMYAJIT MONDAL**  
MBBS  
AIIMS, KALYANI



**SAYAK CHAKRABORTY**  
MBBS  
Medical College Kolkata



**SYED ROSHAN ALI**  
MBBS  
Midnapore Medical College & Hospital



**SWAPNONIL CHAKI**  
MBBS  
Medical College Kolkata



**AYANTIKA JAS**  
MBBS  
Medical College, Kolkata



**ALAPAN DAS**  
PHYSICS  
Visva Bharati



**SATVIK BANSAL**  
Computer Science & Engg.  
Indian Institute of Technology -  
Kharagpur



**SWADESH JANA**  
Computer Science And Engineering  
Jadavpur University



**SOUMYO BHATTACHARJEE**  
Mechanical Engineering  
Indian Institute of Technology -  
Kharagpur



**RAVI SRI RAM CHOWDARY**  
Computer Science and Engineering  
Indian Institute of Technology  
Kharagpur



**AKASH DAS**  
Electronics & Communication Engg.  
Institute of Engineering and Management



**SAPTASHWA MAITY**  
Agriculture and Food Technology  
Indian Institute of Technology -  
Kharagpur



**ANINDYA SIKDAR**  
Computer Science & Engg.  
Indian Institute of Technology -  
Kharagpur



**SRINJOY GHOSH**  
Physics  
R K Mission Res. College Narendrapur



**SHRAYAM MITRA**  
Aerospace Engg.  
Indian Institute of Technology -  
Kharagpur



**SAMIK MUKHOPADHYAY**  
Civil Engineering  
Indian Institute of Technology -  
Kharagpur



**ANUBHAB GHOSH**  
Computer Science and Engineering  
Indian Institute of Information Technology,  
Kalyani



**SAYAN DUTTA**  
BS-MS (INT.)  
Indian Institute of Science Education  
and Research, Kolkata



**MAINAK JANA**  
Biotechnology Indian Institute of Technology -  
Kharagpur



**POTHIREDDY NITHEESH**  
Mechanical Engineering  
Indian Institute of Technology -  
Kharagpur



**ARJO DASGUPTA**  
BS-MS (INT.)  
Indian Association for the Cultivation  
of Science



**SOHOM GUPTA**  
BS-MS (INT.)  
IISER, Kolkata



**SIDDHARTH KASHYAP**  
MBBS  
Medical College Kolkata



**MD. MASUM AKHTAR**  
MBBS  
Calcutta National Medical College



**RAJARSHI BHATTACHARYA**  
Electrical Engineering  
Jadavpur University



**ANIKET MANDAL**  
Electronics & Electrical Communication Engg.  
Indian Institute of Technology - Kharagpur



**DEBBANI PATRA**  
MBBS  
NRS Medical College



**KUMARDIP BASAK**  
Civil Engineering  
Indian Institute of Technology -  
Kharagpur



**PRANAYAN METIYA**  
Mechanical Engineering  
Indian Institute of Technology -  
Kharagpur



**ROUDRANIL DAS**  
Mathematics  
St. Xaviers College



**SAUTAM BHATTACHARYA**  
MBBS  
IPGME&R (SSKM Hospital)



**SUPARNO ADHIKARY**  
MBBS  
Medical College, Kolkata

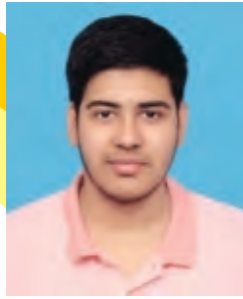


**MANDIRA MAJI**  
MBBS  
College of Medicine and JNM Hospital,  
Kalyani





**ANKANA RAY**  
MBBS  
College of Medicine and JNM Hospital,  
Kalyani



**ANISH SOFAT**  
Computer Science  
Indian Institute of Technology -  
Kharagpur



**RWITICK GHOSH**  
Computer Science and Engineering  
Jadavpur University



**SUNDHODEEP ROY**  
MBBS  
AIIMS, Kalyani



**SUBHAJIT GHOSH**  
Mechanical Engg.  
Jadavpur University



**MAINAK NANDI**  
Electrical Engg.  
Kalyani Govt Engineering College



**SURYADEEP MANDAL**  
Electrical Engineering  
Indian Institute of Technology -  
Kharagpur



**AAKASH GHOSH**  
BS-MS (INT.)  
Indian Institute of Science Education  
and Research, Kolkata



**SUHEL AHAMED**  
MBBS  
Medical College Kolkata



**ARINDAM MAJEE**  
Electronics & Tele-Communication Engineering  
Jadavpur University

## **BIGYANI KANYA MEDHA BRITTI**

### **A Promising Initiative to Crown the Women Talents**

#### **Formulation of the Program**

The yardstick of a nation's progress can be attributed to the development of women in terms of education. And science education plays a pivotal role by manifestation of logical and rational mindset amongst girl students who can expand the knowledge and skills thus acquired to further generations ensuring foundation of a sustainable and holistic society. West Bengal is accredited to be the seat of prominent women scientist like, Ashima Chatterjee.

With an aim to prioritize girl's participation in the field of science and research and explore larger participation of girl students of our state in the discipline of science, technology and medicine, JBNSTS conceived a unique initiative named 'Bigyani Kanya Medha Britti'. The Department of Science and Technology and Biotechnology, Government of West Bengal took appreciation of our proposal and sanctioned the project in 2017 which is meant to nurture the promising girl students of our state only. Since inception, the concept of Bigyani Kanya Medha Britti touched the lives of girl students residing all across West Bengal pursuing higher education in the discipline of science.

#### **Pertinent interventions of the program**

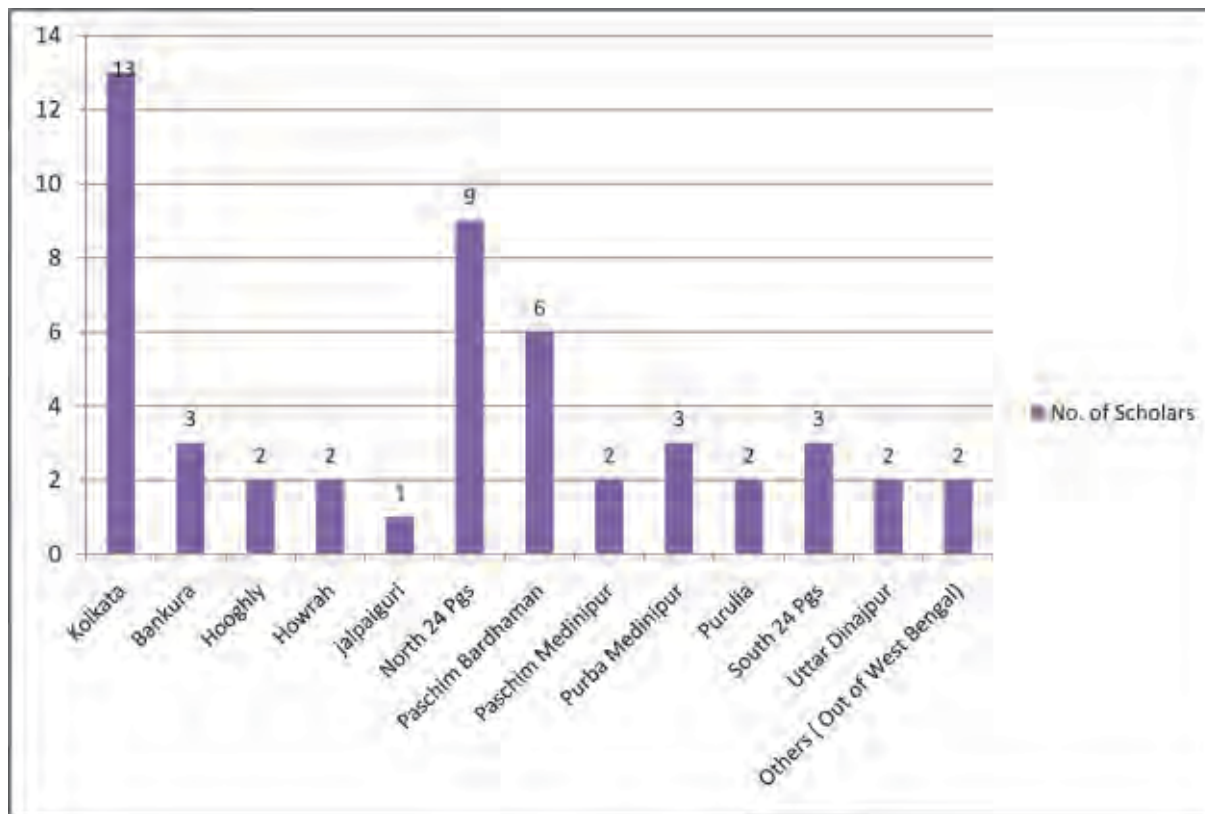
- The Bigyani Kanya Medha Britti initiative places particular emphasis on higher education of girls of our state who are pursuing undergraduate studies in the periphery of science, technology and medicine and advocates substantial representation of female students in science education in West Bengal.
- Financial support in the form of scholarship to empower the talented girl students in their academic pursuits.
- Bigyani Kanyas will be groomed through participation in a wide spectrum of exploring and valued academic programs such as science workshops, seminars, nurturing science camps and many other enrichment programs all over the year under the mentorship of esteemed professionals.
- Moreover, Bigyani Kanyas are also recipient of other academic supports to participate in national level seminar etc.

#### **Eligibility criteria & scholarship details of Bigyani Kanya Medha Britti 2019**

Girl students qualified (10+2) Board examination from any recognized Board (WBCHSE/CBSE/ISC) in Science in 2019 and pursuing Engineering/ Medical / Basic Science (Hons.) courses in undergraduate levels in West Bengal. The selection had been made through JBNSTS Senior Talent Search Test 2019.

Rs. 2000/- per month is awarded to the scholars qualified for Bigyani Kanya Medha Britti throughout the course of Bachelors and Masters (Basic Science) degree with annual book grant of Rs. 2000/- per annum for five years till completion of their post graduation.

### District-wise distribution of Bigyani Kanya Medha Britti Awardees-2019



**Bigyani Kanya Medha Britti - Batch 2019 (Rank wise list)**



**MANISHA BOSE**  
Biology  
Presidency University,  
Kolkata



**ANWESHA BANERJEE**  
Biology  
Presidency University, Kolkata



**HRITHIKA BISWAS**  
MBBS  
Medical College, Kolkata



**SOUMITA MANDAL**  
MBBS  
Medical College, Kolkata



**OISHEE PAL**  
Chemistry  
Jadavpur University, Kolkata



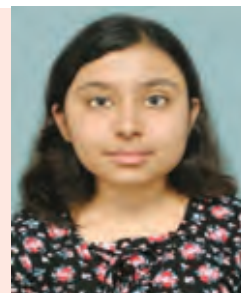
**TUSHITA BHATTACHARYA**  
Zoology  
Lady Brabourne College, Kolkata



**SHREYASHRI SARKAR**  
Aerospace Engg.  
IEST, Shibpur, Howrah



**AMRAPALY GHOSH**  
Chemistry  
Lady Brabourne College, Kolkata



**ANANYA MUKHERJEE**  
MBBS  
Medical College, Kolkata



**PREETI BAG**  
MBBS  
Bankura Samm. Med. Coll., Bankura



**SRIJITA GHOSH**  
MBBS  
R.G. Kar Med. Coll. & Hospital



**SURYATAPA SANTRA**  
CHEMISTRY  
Jadavpur University, Kolkata



**SUSMITA DAS**  
Chemistry  
Raiganj University, North Dinajpur



**ESHA ROYCHOUHDURY**  
MBBS  
Medical College, Kolkata



**KANKANA KAPHA**  
MBBS  
Coll. Of Med. & Sagore Dutta Hospital,  
Kolkata



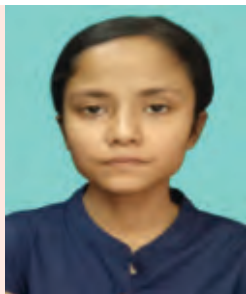
**SURJYANEE HALDER**  
Computer Science & Engineering  
Calcutta University, Kolkata



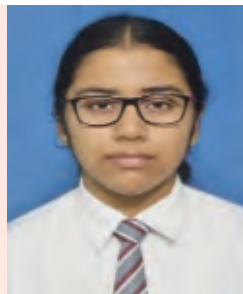
**AINDRILA MAITI**  
Physics  
Jadavpur University, Kolkata



**SRIRUPA DATTA**  
Electrical Engineering  
Jadavpur University, Kolkata



**ANANYA SINHA**  
Chemistry  
Jadavpur University, Kolkata



**SEBONTIKA BOSE**  
Chemical Engg.  
NIT, Durgapur



**AZMINA UROOJ**  
Statistics  
Lady Brabourne College, Kolkata



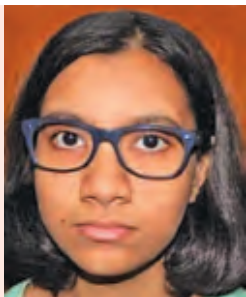
**PRIYANKA SINHA**  
Physics  
Midnapore Coll. Auton., Midnapore



**HANNVIKSHA SINGH**  
MBBS  
College of Med. & JNM Hospital, Nadia



**DEBOLEENA DAS**  
Electrical Engineering  
NIT, Durgapur



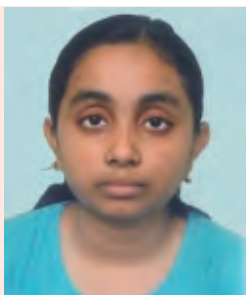
**TORSA PAIN**  
MBBS  
Midnapore Med. Coll. & Hosp.,  
Midnapore



**DEBASMITA CHAKRABORTY**  
MBBS  
Bankura Samm. Med. Coll.,  
Bankura



**SREEJA DATTA**  
Physics  
Bethune College, Kolkata



**ANISHA GHOSH**  
Physics  
Nabagram Hiralal Paul Coll., Hooghly



**ANUSHREE BISWAS**  
Biotechnology (Intg. M.Sc.)  
St. Xaviers College, Kolkata



**SANANDITA DAS**  
Information Technology  
Jadavpur University, Kolkata



**SHALINI BHAUMIK**  
Bio-chemistry  
Asutosh College, Kolkata



**AMBALIKA BASAK**  
BS-MS (Int.)  
IACS, Kolkata



**AHANA DUTTA**  
MBBS  
Murshidabad Medical College,  
Murshidabad



**RIYA DAS**  
Physics  
Jadavpur University, Kolkata



**ANKUSREE BAG**  
Mathematics  
Bethune College, Kolkata



**BANANTI DATTA**  
Physics  
Presidency University, Kolkata



**BHASWATI DAS**  
Physics  
Raiganj University, North Dinajpur



**SAYANTANI BHANDARI**  
Physics  
Bethune College, Kolkata



**UPAMA AICH**  
MBBS  
Medical College, Kolkata



**GUNDEPURI INDHU SRI**  
Civil Engineering  
Indian Institute of Technology,  
Kharagpur



**SUPARNA KUMBHAKAR**  
Zoology  
Bankura Sammilani College, Bankura



**SAINDHABI GHOSH**  
Computer Science & Engg  
B.P. Poddar Inst. of Mgmt. & Tech.,  
Kolkata



**SHALINI DATTA**  
MBBS  
Medical Collage, Kolkata



**ANANYA BISWAS**  
BS-MS(Int.)  
IISER, Kolkata



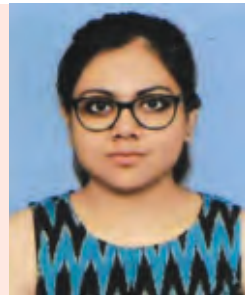
**ADRIJA BANERJEE**  
Microbiology  
St. Xaviers College, Kolkata



**SWEATA MAJUMDER**  
Statistics  
St. Xavier's College, Kolkata



**KANKANA MONDAL**  
Chemistry  
Lady Brabourne College, Kolkata



**SAYANTANI PAUL**  
Microbiology  
Maulana Azad College, Kolkata



**AMISHA PARVIN**  
Electrical Engg.  
Jadavpur University, Kolkata



**AUSMITA BAIRI**  
Physics  
Lady Brabourne College, Kolkata



**RAHELI MANNA**  
Mathematics  
Midnapore College, Midnapore



**SAPTASHI CHATTERJEE**  
Physics  
Bethune College, Kolkata



**SUDIPA AICH**  
Chemistry  
Bethune College, Kolkata



**SANGITA PAUL**  
Physics  
Bethune College, Kolkata



**ANNESHA CHATTERJEE**  
Chemistry  
Bethune College, Kolkata

*The Society Thrives  
on Girl's Empowerment*





# THE JBNSTS JUNIOR TALENT SEARCH TEST

An enterprising  
initiative to unfold  
vibrant nascent talent

# JUNIOR SCHOLARSHIP PROGRAM

Unique program for high school students

## Genesis of Junior Scholarship Program

**D**uring last sixty years, JBNSTS served as a distinguished institute engaged in the activity of sprouting the seeds of knowledge and manifestation of inherent talent of brilliant minds in the discipline of science and technology through various scholarship programs and other innovative initiatives. In 2015, JBNSTS embarked on a similar journey on an expanded scale to identify, nurture and nourish the blooming talents across the state of West Bengal who are on the verge of higher education in the discipline of science in 10 + 2 standard. In this regard we humbly acknowledge the role of Honb'le Chief Minister of West Bengal Ms. Mamata Banerjee for appreciating and initiating this novel scheme.

## Foundation & objectives of Junior Talent Search Test

The principle of Junior Talent Search Test (JTST) is to explore and encourage the young talents from all over West Bengal in the perspective of STEM education through financial as well as nurturing support under proficient expertise. Furthermore, the objectives of the initiative are as follows.

- The program aims to motivate the talented students across the state who are in the plus two level.
- The Junior Scholarship Program encourages the bright students by providing them with financial support for their academic pursuits and activities.



- To stimulate the inherent scientific faculties of the talented students through the modes of workshops, seminars and lectures by eminent and experienced scientists and educationists of national and international level.
- The program provides vital exposure to the scholars by visiting esteemed research laboratories and technology centers to build up the first hand knowledge of cutting-edge research through hands-on activities under the mentorship of professionals of science, technology and medicine.
- To appreciate the interdisciplinary feature of science this would essentially help them to build a career in science, technology and medicine.



### Scholarship details

- The value of scholarship is Rs. 1250/- per month and the scholars are also rewarded with annual Book grant of Rs. 2500/- per annum for two years.
- The selected fifty Encouragement Awardees are felicitated with one time book grant worth Rs. 5000.

### Identification process of Junior Talent Search Test

<p><b>First Phase</b></p>	<p><b><i>Written Examination</i></b></p> <p>Full Marks: 90 Time: 2 hours</p>	<p>This phase evaluates the necessary knowledge and potential command of students in science subjects.</p>
<p><b>Second Phase</b></p>	<p><b><i>Interview</i></b></p> <p>Full Marks: 100</p>	<p>In this stage the first phase qualified students are interviewed on the basis of their depth of knowledge, potential of scientific thinking and creativity. The Junior scholars are selected finally after this phase.</p>



## Eligibility Criteria

Students passed 10<sup>th</sup> standard with minimum 75 percent marks (overall) & above in aggregate from any board in 2019 and studying science in class XI with the combination of any three of Physics/Chemistry/ Mathematics/ Biology/Statistics/Computer Science.

## JTST Examination 2019: Detailed information

Date of Exam	Candidates appeared	1 <sup>st</sup> phase qualified candidates	Selected Junior Scholars	Encouragement Awardee
25/08/2019	7728	481	233	51



## Centre wise list of candidate's participation

Sl No.	Name of the Examination Centre	No. of Candidates appeared
1.	A B N Seal College, Coochbehar	160
2.	Alipurduar College, Alipurduar	62
3.	APC Roy Govt. College, Siliguri	49
4.	Arambagh Girls College, Hoogly	234
5.	Balurghat College, Dakshin Dinajpur	64
6.	Bankura Sammilani College, Bankura	448
7.	Barasat Girls' High School	239
8.	Barrackpore Rashtraguru Surendranath College, North 24 Parganas	337
9.	Basirhat College, North 24 Parganas	80
10.	Burdwan Raj College, Burdwan	441
11.	Chakdah College, Nadia	201
12.	Dum Dum Motijheel College, North 24 Parganas	196
13.	Ekalavya Model Residential School, Jhargram	125
14.	Fakirchand College, Diamond Harbour, South 24 Parganas	86
15.	Hooghly Mohsin College, Chinsurah, Hoogly	297
16.	Indian Institute of Technology, Kharagpur	148
17.	J. K College, Purulia	227
18.	Jadavpur University, Kolkata	656
19.	Krishnanagar Collegiate School, Nadia	222
20.	Krishnath College, Berhampore, Murshidabad	384
21.	Malda College, Malda	83
22.	Midnapore College, Paschim Midnapore	428
23.	Narasinha Dutt College, Howrah	405
24.	National Institute of Technology, Durgapur	240
25.	P.D Women's College, Jalpaiguri	100
26.	Prabhat Kumar College, Contai, Purba Midnapore	309
27.	Presidency University, Kolkata	272
28.	R.K.M Residential College, Narendrapur, South 24 Parganas	199
29.	R.K.M Vidyamandira, Belurmath, Howrah	171
30.	Raiganj Surendranath Mahavidyalaya, Uttar Dinajpur	111



Sl No.	Name of the Examination Centre	No. of Candidates appeared
31.	Sundarban Janokalyan Sangha High School, Sagar, South 24 Parganas	59
32.	Sundarban Mahavidyalaya, Kakdwip, South24 Parganas	75
33.	Tamralipta Mahavidyalaya, Midnapore (E)	295
34.	Visva Bharati Shantiniketan, Birbhum	325
	<b>Total number of candidates appeared in JTST 2019</b>	<b>7728</b>

### List of JBNSTS Junior Scholars : 2019 Batch (in alphabetical order)

Sl No.	Name of the Scholar	Present Institution
1	Aarattrick Basu	Aditya Academy Secondary
2	Abhinandan Jana	Ramakrishna Mission Vidyalaya
3	Abhinibesh Sinha	Ramakrishna Mission Vidyalaya
4	Abhiraj Banerjee	Patha-Bhavan
5	Abhishek Kashyap	Ramakrishna Mission Vidyalaya
6	Abhisruta Maity	Bankura Zilla School
7	Abir Bera	Kolaghat Thermal Power Plant High School
8	Adipta Halder	Patha Bhavan
9	Aditya Krishna Das	The Modern Academy
10	Adwitiya Datta	Vidyasagar Shishu Niketan
11	Agneev Ray	Delhi Public School, Ruby Park
12	Ahan Chatterjee	Salt Lake School
13	Ahana Pal	Kendriya Vidyalaya, Fort William
14	Aindrilla Mukherjee	Delhi Public School, Ruby Park
15	Aishi Chakraborty	Aligunj R.R.B. Vidyalaya
16	Alaap Kumar Mukhopadhyay	South Point High School
17	Amit Malakar	Kanksa High School
18	Amrisha Chowdhury	Delhi Public School Ruby Park
19	Amrita Ghosh	Suren Chandra Modern School
20	Ananya Purkait	Jyotsnamayee Girls High School
21	Ananya Sutradhar	Sunity Academy
22	Angon Mandal	Kandi Raj High School
23	Aniket Adhikari	Vivekananda Mission School
24	Aniket Das	Delhi Public School Ruby Park, Kolkata
25	Anish Kumar Hazra	Ramakrishna Mission Vidyabhavan High School

SI No.	Name of the Scholar	Present Institution
26	Ankan Sen	Hem Sheela Model School
27	Ankit Gayen	Bdm International
28	Ankit Mondal	M. C. Kejriwal Vidyapeeth
29	Antariksha Jana	Ramkrishna Mission Vidyabhavan H.S
30	Anupam Maity	Ramakrishna Mission Vidyalaya
31	Anupam Sardar	Ramakrishna Mission Vidyalaya
32	Anuron Chakraborty	South Point High School
33	Anushka Chatterjee	Hem Sheela Model School
34	Anuska Indra	Chuanpur Vidyaniketan Girls High School
35	Anwesa Chattopadhyay	Garden High School
36	Anwesa Samanta	Ghorathakuria Ajoy Vidyapith
37	Aranyo Ray	Kalyani Public School
38	Aratrika Basak	Sunity Academy
39	Archis Mukhopadhyay	Bhavans Gangabux Kanoria Vidyamandir
40	Archishman Mukherjee	South Point High School
41	Archisman Bandyopadhyay	South Point High School
42	Argha Kamal Samanta	Ramakrishna Mission Vidyapith ,Purulia
43	Arghya Dhali	Ramakrishna Mission Vidyalaya
44	Arghya Roychowdhury	Ramakrishna Mission Vidyalaya
45	Arghyadeep Kolay	Techno India Group Public School
46	Arghyadeep Malakar	Madhyamgram High School
47	Arighna Jana	Pramila Memorial Institute
48	Arijeet Mandal	Bethuadahari Jagat Chandra Memorial High School
49	Arijit Ghosh	Nabadwip Bakultala High School
50	Arijit Panda	Ramkrishna Mission Vidyabhavan
51	Arijit Saha	Ramakrishna Mission Vidyalaya
52	Aritra Biswas	Krishnagar Collegiate School
53	Aritra Kundu	Salt Lake School
54	Aritra Pandit	Burdwan Municipal High School
55	Aritra Paul	Ramakrishna Mission Vidyalaya
56	Aritra Ray	Burdwan Municipal High School
57	Arkan Maity	Sonamui F.S.N High School
58	Arman Mallick	Memari High Madrasah
59	Arnab Nandi	Pathfinder Higher Secondary Public School
60	Arnab Sarkar	Alipurduar Mc. William Higher Secondary School
61	Arpan Das	Ramakrishna Mission Vidyalaya

Sl No.	Name of the Scholar	Present Institution
62	Arya Mandal	Gorabazar Iswar Chandra Institution
63	Aryan Gupta	Sudhir Memorial Institute
64	Aryarshi Chattaraj	Beliatore High School
65	Atindra Khan	St. Pauls Academy
66	Atrayee Samanta	Our Lady Queen Of The Missions School
67	Avigyan Khatua	Delhi Public School Ruby Park
68	Avijit Saha	Ramakrishna Mission Vidyalaya
69	Aviroop Mitra	Burdwan Municipal High School
70	Ayan Mandal	Bk. T.P.P.Prabir Sengupta Vidyalaya
71	Ayantik Bhaumik	Bholananda National Vidyalaya
72	Ayushman Nandi	M. C. Kejriwal Vidyapeeth
73	Banibrata Manna	Ramakrishna Mission Vidyalaya
74	Bapan Mandal	Kenduadihi High School
75	Basil Labib	Birla High School
76	Bishwayan Ghosh	Adamas International School
77	Bratin Mondal	Santipur Municipal High School
78	Camelia Roy	Raiganj Coronation High School
79	Chaitali Dewashi	Bankura Banga Vidyalay
80	Chandrima Halder	Shamayita Convent School
81	Debankan Samanta	Barasat P.C.S Govt. High School
82	Debanuj Basak	Apeejay School, Saltake
83	Debanwesa Bandhu	Makhla Debiswari Vidyaniketan For Girls
84	Debarjan Kar	Baranagar Narendranath Vidyamandir
85	Debayan Ghosh	Berhampore J.N. Academy
86	Debraj Singha	Birbhum Zilla School
87	Deeptanu Dey	Prafullanagar Vidyamandir
88	Dhrubajyoti Pal	Midnapore Collegiate School
89	Dhruv Sarkar	Pathfinder Higher Secondary Public School
90	Dibyajoti Chatterjee	Birbhum Zilla School
91	Dipayan Datta	Hem Sheela Model School
92	Diptendu Sarkar	Salt Lake School English Medium
93	Diptesh Karmakar	Hem Sheela Model School
94	Dwaipayan Giri	Contai High School
95	Dwip Brahma	Bholananda National Vidyalaya
96	Enakshi Chatterjee	Garden High School
97	Eshna Roy	South Point High School



Sl No.	Name of the Scholar	Present Institution
98	Harsh Gupta	Burnpur Riverside School
99	Hemraj Manna	Ramakrishna Mission Vidyalaya
100	Hridakash Kundu	Gorabazar Iswar Chandra Institution
101	Iftesam Hasnut	Chanchal Siddheswari Institution
102	Iman Das	Rohini C R D High School
103	Indrajit Das	Hem Sheela Model School
104	Ishan Pal	Midnapore Collegiate School
105	Jishnu Kesh	Salt Lake School English Medium
106	Kazi Aryan Amin	Burdwan Municipal High School
107	Khushi Bhattacharya	Holy Child School
108	Kinjal Dey	Dav Public School, Midnapore
109	Koustav Mallik	Chandernagore Sri Aurobindo Vidyamandir
110	Krittika Paul	Delhi Public School Ruby Park Kolkata
111	Kunal Ghosh	Dhaniakhali Mahamaya Vidyamandir
112	Lalchand Gorai	Ramakrishna Mission Vidyapith, Purulia
113	Manas Sarkar	Ramakrishna Mission Boys Home High School, Rahara
114	Mitadru Datta	B.D.M. International
115	Mohammad Suhail	Burdwan Municipal High School
116	Mousam Bhowal	Krishnath College School
117	Mukulita Som	Hariyana Vidya Mandir
118	Nakshatra Bhunia	Zilla Public School
119	Navonil Chakrabarti	St Xaviers Collegiate School
120	Navonila Sinharay	Sushila Birla Girls School
121	Nilotpal Goswami	South Point High School
122	Oishik Chowdhury	Kendriya Vidyalaya Ballygunge
123	Pritam Chakraborty	Krishnath College School
124	Pritish Karmakar	Ramakrishna Mission Vidyapith Purulia
125	Priyajit Ghosh	Kandi Raj High School
126	Priyam Saha	Baranagar Narendranath Vidyamandir
127	Priyanshu Mandal	Kenduadihi High School
128	Puspal Hazra	Birbhum Zilla School
129	Rahul Adhikari	Burdwan Municipal High School
130	Rahul Goswami	Chandernagore Sri Aurobindo Vidyamandir
131	Rahul Mandal	D.A.V. Public School ,Midnapore
132	Rajdeep Ghosh	Kendriya Vidyalaya Ballygunge



## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

Sl No.	Name of the Scholar	Present Institution
133	Rajneel Basu	Hariyana Vidya Mandir
134	Rakesh Malas	Chandrakona Jirat High School
135	Ratul Sen	Delhi Public School, Ruby Park
136	Raunak Ray	Ramakrishna Mission Vidyalaya
137	Riddhankur Sarkar	Burdwan Town School
138	Riddhiman Maity	Sutahata Janakalyan Sikshaniketan
139	Ridin Datta	Garden High School
140	Rik Biswas	St. Augustines Day School, Shyamnagar
141	Rinita Samanta	Gokhale Memorial Girls School
142	Ritabrata Roy	Basirhat High School
143	Rohini Banerjee	Delhi Public School, Dagapur, Siliguri
144	Romit Roy Chowdhury	St Xaviers Collegiate School
145	Rritobak Dutta	Patha Bhavan
146	Ruchira Mukherjee	St. Josephs Convent
147	Rupak Seth	Berhampore J N Academy
148	Rupan Bhattacharya	Ramakrishna Mission Vidyalaya
149	Sagar Das	Techno India Group Public School Garia
150	Sagnik Mukherjee	Burdwan Municipal High School
151	Saikat Pan	Midnapore Collegiate School
152	Saikat Sengupta	D.A.V. Model School, Durgapur
153	Samanway	South Point High School
154	Samrat Mitra	Ariadaha Kalachand High School
155	Samudra Mitra	East West Model School
156	Sanchit Mukherjee	B.D.M International
157	Sangbit Karmakar	Gorabazar I.C. Institution
158	Sankarshan Mondal	Burdwan Model School
159	Sankhyo Kayal	Ramakrishna Mission Vidyalaya
160	Saptarshi Dutta	Pannalal Institution
161	Saptarshi Mondal	Kolaghat Thermal Power Plant High School
162	Saraswata Sensarma	St. Lawrence High School
163	Saswato Ray	Don Bosco Park Circus
164	Sattwamo Ghosh	South Point High School
165	Satwata Chattopadhyay	Abhinav Bharati High School
166	Sauhardya Dutta	Ballygunge Government High School
167	Saurashis Sinha	Tarakeswar Mahavidyalaya
168	Sayak Panja	Ramakrishna Mission Vidyalaya

Sl No.	Name of the Scholar	Present Institution
169	Sayan Bhowmick	Ramakrishna Mission Vidyalaya
170	Sayan Jana	Contai High School
171	Sayan Palit	Krishnagar Academy
172	Sayandeep Chaudhuri	Delhi Public School Ruby Park
173	Sayandeep Giri	Midnapore Collegiate School
174	Sayanho Biswas	St. Xaviers Collegiate School, Kolkata
175	Syantani Chakraborty	Nabagram Vidyapith
176	Syantani Datta	Bankura Zilla School
177	Syantani De	Burdwan Municipal High School
178	Syantani Sarkar	Marias Day School
179	Syantani Mandal	Deulpara B N Vidyaniketan
180	Shaswata Roy	Julien Day School, Kalyani
181	Shibashis Mukhopadhyay	Burdwan Municipal High School
182	Shouryadeep Adhikary	Ramakrishna Mission Vidyalaya
183	Shrestha Dutta	Kalyani Central Model School
184	Shreyasi Sen	Bidya Bharti Girls High School
185	Shubhajit Rana	Nayabasan Jk Vidyapith
186	Shubhrojyoti Dhara	Kalyani Public School
187	Snigdha Paul	Niva Ananda Vidyalaya, H.S.
188	Soham Barik	Navanalanda High School
189	Soham Mitra	Mahesh Sri Ramkrishna Ashram Vidyalaya
190	Soham Shyamal	Midnapore Collegiate School
191	Somjita Sen	Delhi Public School -Ruby Park
192	Somoprovo Bhattacharjee	Burnpur Riverside School/Chittaranjan
193	Sougata Panda	Bankura Zilla School
194	Soumalya Pramanik	Mohiary Kundu Choudhury Institution
195	Soumendu Konar	Aushnara High School H.S
196	Soumyabrata Chaudhuri	South Point High School
197	Soumyadeep Choudhury	South Point High School
198	Soumyadeep Roy	Hem Sheela Model School
199	Soumyadeep Sadhu	Ramakrishna Mission Vidyalaya

Sl No.	Name of the Scholar	Present Institution
200	Soumyadip Dey	St. Xaviers Collegiate School
201	Soumyajit Ghosh	Midnapore Collegiate School
202	Souptik Dutta	B.T. Road Govt Sponsored Hs School
203	Soustab Halder	Aditya Academy Senior Secondary
204	Souvik Chouly	Ramakrishna Mission Vidyalaya
205	Souvik Mukherjee	Bankura Christian Collegiate School
206	Srija Mukhopadhyay	Vivekananda Mission School
207	Srijan Pradhan	Midnapore Collegiate School
208	Subhadip Kundu	Ramakrishna Mission Vidyalaya
209	Subhadip Sahana	Kenduadihi High School(H.S)
210	Subham Panda	Vidyasagar Shishu Niketan
211	Subhasis Samanta	Bagnan High School
212	Subhayan Sinha	Birla Bharati School
213	Subhradip Maity	Vivekananda Mission High School
214	Sukalpo Dey	Hooghly Collegiate School
215	Sukanya Patra	Kolaghat Thermal Power Plan High School
216	Sumana Bhattacharjee	Bidhan Nagar Govt. School
217	Suvojit Das	Dps,Ruby Park,Kolkata
218	Swapnanil Mandal	Salt Lake School
219	Swapnendu Das	Bankura Zilla School
220	Swapnesh Sinha	St. Augustines Day School
221	Swarnava Chakraborty	Sankrail Abhoy Charan High School
222	Swayangsiddha Goswami	B.D.M International
223	Tanir Sahoo	Contai Public School
224	Tapojyoti Bhowmik	Kalyani University Experimental High School
225	Tarak Das	South Point High School
226	Tarik Anowar	Burdwan Municipal High School
227	Tathagata Chakraborty	Ramakrishna Mission Boys Home High School H.S
228	Tridib Mondal	South Point High School
229	Triparna Samanta	Bnr Excellence Academy
230	Triparno Choudhury	Berhampore J N Academy
231	Trishan Mondal	Nirmal Hriday Ashram Boys High School
232	Urmila Banerjee	Bhavans Gangubux Kanoria Vidyamandir
233	Vishesh Goyal	Birla High School

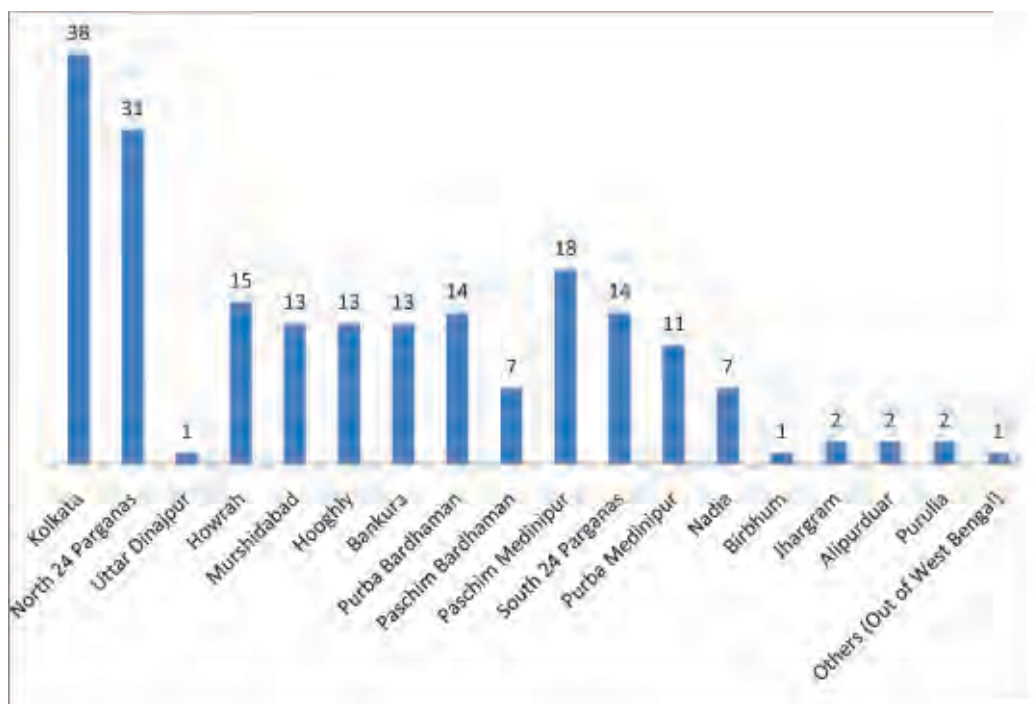
### List of JBNSTS Encouragement Awardees : 2019 Batch (in alphabetical order)

SI No.	Name of the Candidate	Present Institution
1	Abhik Maji	Paramanandapur Jagannath Institution
2	Abhinandan Mondal	Ramakrishna Mission Vidyapith Purulia
3	Abhraneel Ghosh	Hooghly Collegiate School
4	Adityarup Laha	B.D.M. International
5	Aikik Majhi	Ramakrishna Mission Vidyalaya
6	Anangsha Pal	Delhi Public School Ruby Park, Kolkata
7	Animesh Talukdar	S.T Marys High School
8	Anirban Bag	Garhbeta High School
9	Anirban Sarkar	Ramakrishna Mission Vidyapith Purulia
10	Ankit Paul	Methodist School, Dankuni
11	Aratrik Basu	South Point High School
12	Aritra Ghosh	Krishnagar Academy
13	Arnab Das	Joynagar Pallisree Vidyaniketan
14	Aryadeep Dhar	Ramakrishna Mission Vidyalaya
15	Atmadeep Bhattacharya	Nava Nalanda Santiniketan High School H.S
16	Aveepsa Das	Delhi Public School Ruby Park
17	Avigyan Roy	Bhavans Gangabux Kanoria Vidyamandir
18	Avijit Bhadury	South Point High School
19	Ayan Rit	B E College Model School
20	Biswaraj Bhattacharyya	St.Augustine Day School
21	Debmitra Mukherjee	South Point High School
22	Farhan Ikbal	Gorabazar I.C.Institution
23	Jitendra Kumar Roy	Bethuadahari Jcm High School
24	Kusumita Ghose	Path Finder Higher Secondary Public School
25	Md Zahed Ahamed	Bohar High School
26	Nurjaman Sekh	Bankra Islamia High School
27	Pathikreet Chowdhury	Don Bosco School Park Circus
28	Pratik Ranjan Sau	Kishorenagar Sachindra Siksha Sadan
29	Pritam Nandan	Ramakrishna Mission Vidyalaya
30	Priyanshu Mandal	Bodhicariya Senior Secondary School
31	Priyanshu Acharya	Assembly Of God Church School
32	Ritik Raushan	Ramakrishna Mission Vidyapith
33	Ritu Kulshrestha	Shri Shikshayatan School
34	Rudra Shankha Nandy	South Point High School
35	Rudrayan Nikhil Gooptu	St. Xaviers Collegiate School

SI No.	Name of the Candidate	Present Institution
36	Saber Ahammed	Bankra Islamia High School
37	Saikat Mondal	Madarat Popular Academy
38	Satyaki Saha	Apeejay School Salt Lake
39	Shameek Saha	Hijli High School
40	Shreyan Naskar	South Point High School
41	Soham Bhattacharyya	Bhavans Gangabux Kanoria Vidyamandir
42	Soham Mitra	Holy Child School
43	Sohan Chowdhury	Krishnagar Collegiate School
44	Soumadeep Mondal	Birbhum Zilla School
45	Soumya Das	South Point High School
46	Souvick Pradhan	Howrah Vivekananda Institution
47	Srijan Chattopadhyay	Rahara Ramakrishna Mission Boys Home H S
48	Sucharita Chatterjee	St.John's Diocesan Girls H.S School
49	Sutirtha Ghosh	Delhi Public School, Ruby Park, Kolkata
50	Swarnali Ghosal	Burdwan Municipal Girls High School
51	Swati Mishra	South Point High School



## District wise distribution of Junior Scholars (2019)



## Award for best school in Junior Scholarship Category

- **Best School:** Ramakrishna Mission Vidyalaya, Narendrapur, South 24 Parganas
- **Special Award:** South Point High School, Kolkata  
Burdwan Municipal High School, East Burdwan  
Delhi Public School, Ruby Park, Kolkata  
Midnapore Collegiate School, West Midnapore



## Nurturing workshop for Junior Scholars

### A five-day scientific voyage for 2018 batch

JBNSTS in collaboration with Indian Institute of Science Education & Research, Kolkata organized a nurturing workshop during 17-21 June, 2019, for Junior Scholars Batch of 2018 under the active support of Dr. Sourav Pal (Director, IISER) and the other resource persons of IISER. It was a grand success which transpired to be a huge learning curve for the talented students who not only had the opportunity to interact with legendary teachers and scientists but also engage themselves in the hands-on experiments in state-of-the-art laboratory facilities of IISER, Kolkata activities in the disciplines of basic science as well as emerging subjects like Computational modeling etc. This exposure would develop an aptitude towards inter-disciplinary research in the periphery of science, technology and medicine. A pen picture of the theoretical sessions of the workshop is given below:

Topic & Title	Speaker
<b>Echolocation of bats</b>	Prof. Soumitro Banerjee IISER Kolkata
<b>History of Periodic Table</b>	Prof. Sayam Sengupta IISER, Kolkata
<b>Using Mathematics to understand Biology and applying both to fight Cancer</b>	Dr. ParthoSaroithi Ray IISER, Kolkata
<b>Do Liquids have a skin?</b>	Dr. Chirag Kalelkar IIT Kharagpur
<b>Experiments on making fireworks</b>	Dr. Subhajit Bandyopadhyay IISER, Kolkata
<b>Story of Galaxy</b>	Dr. Narayan Banerjee IISER Kolkata
<b>Tectonic Plate theory and earthquake</b>	Dr. Sanjay K Mandal IISER, Kolkata
<b>Probability</b>	Dr. Ashok Kumar Nanda IISER, Kolkata
<b>Mathematical interpretation of Data Science</b>	Dr. Kiranmoy Das ISI, Kolkata
<b>A Bouquet of Stories</b>	Prof. Partha Pratim Majumder NIBMG, Kolkata



### Exploring new vignettes of science for 2017 batch

JBNSTS organized a brain-storming seminar session for Junior Scholars (2017 batch) during 25-28 June, 2018. The scholars were exposed to exhilarating mesh of intricate aspects of science and technology in the form of stupendous discourses followed with discussion with the esteemed scientists. The program not only aggravated their intrinsic scientific talent but also provided an outline of further academic pursuits and career. Snapshot of topics discussed is given below.

Topic & Title	Speaker
<b>Schrodinger: What is Life?</b>	Dr. Siddhartha Roy Bose Institute, Kolkata
<b>Is The World A Big Computer?</b>	Dr. Arnab Kundu Saha Institute of Nuclear Physics, Kolkata
<b>Innovations For A Better Environment</b>	Dr. Anurag Danda Sr. Advisor, WWF India & Adjunct Faculty, IMT Ghaziabad
<b>Inorganic Chemistry In Biology- Metalloenzymes of Life</b>	Dr. Abhishek Dey Indian Association for the Cultivation of Sciences, Kolkata
<b>Geosciences: Story of Expedition</b>	Dr. Santanu Bose Presidency University, Kolkata
<b>From Mathematics To Data Science: A New Direction</b>	Dr. Kiranmoy Das Indian Statistical Institute, Kolkata
<b>Lamin A: One Protein many Faces</b>	Dr. Kaushik Sengupta Saha Institute of Nuclear Physics, Kolkata
<b>Supramolecular Self Assembly- An introduction</b>	Dr. Partha Sarathi Mukherjee Indian Institute of Science, Bangalore
<b>Invariance and Graph Theory</b>	Dr. Arnab Chakraborty Indian Statistical Institute, Kolkata
<b>Using Mathematics to understand Biology and applying both to fight Cancer</b>	Dr. Partho Sarathi Ray IISER, Kolkata
<b>Language of Communication: Electronics in application</b>	Prof. T. K. Basu Indian Institute of Technology, Kharagpur





# JBNSTS WEST BENGAL DISTRICT SCHEME PROGRAM

Empowering young lives  
through the  
trajectory of science

## West Bengal District Scheme

Incubation for district talents

### Genesis and objective of the program

India has come a long way since enactment of Right to Education Act for the students which ensured education for all as the primary need. A holistic science education, on the other hand, remains inaccessible to the pupils residing in the rural belt of West Bengal. The West Bengal District Scheme, a promising and salubrious program by JBNSTS was introduced in the year 2000. The initiative mainly aims to deliver the latest developments of quality science education to the district school students in a non-formal way which is otherwise not possible in the present scheme of school syllabus. The program addresses the challenges of science learning to practice of the same and also aims to provide fundamental aspects of science to the district/ rural school students which would enable them to inculcate a rational and precocious bent of mind thereby solving the practical and real-life problems of the society. In a nutshell the objective of the workshops is to expose the participants to the basic sciences through simple experiments and activities so that translational aspects of science education are focused. They were also motivated about pursuing science in further stages of career.

An excellent network of all education enthusiasts of West Bengal is intimately associated with JBNSTS. The gamut of numerous teachers, professors and scientists has made WBDS bear fruition. The



entire program and initiative are funded by the Department of Higher Education (DHE), Government of West Bengal. The JBNSTS-WBDS program is a sustaining initiative which has changed lives of several rural students. Now they have acquired the competence to excel in life along with academics.

### Salient features and interventions of WBDS

- A program rooted in the educational philosophy of equity and inclusion.

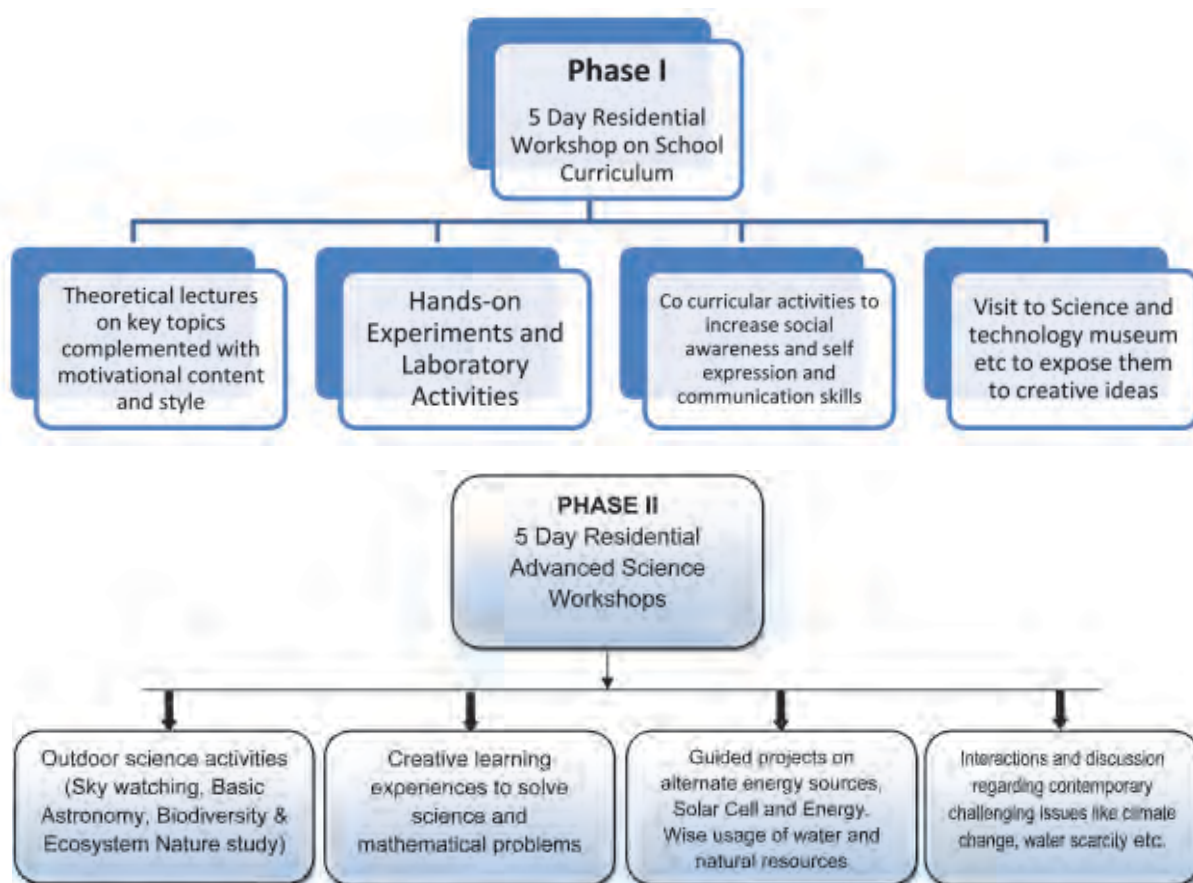


- A program that reaches out to eager students from the districts and remote villages and which promises an exposure to the joy of learning science from a young age.
- A program that encourages participants to rise above societal, economic and gender stereotypes and liberate themselves from the shackles of structured classroom and fixed syllabi.
- Exposure to the JBNSTS-WBDS programs strengthens student confidence, sense of identity and autonomy and a platform for expressing their academic needs.
- A program for students where differentiated and observation based learning, problem solving, hands on training and the importance of questioning is an integral part.
- It is a platform for science minded young students to come together academically and socially from different parts of the State and learn to build a scientific temper through competition, cooperation and communication.

- A program that strongly advocates application of classroom learning to real life problem solving to society and environment.

### Process of nurturing the district talents

WBDS is essentially a bi-phased program. Below mentioned is an outline of the program which elucidates the entire process.



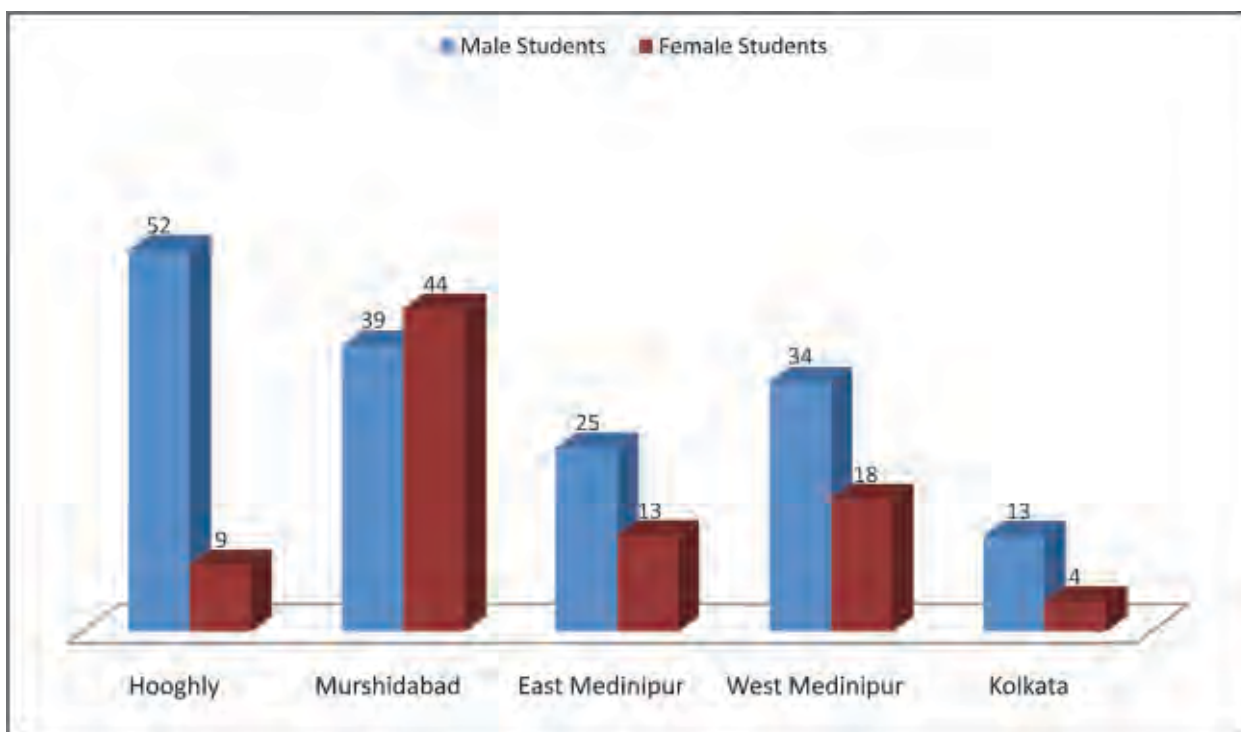
## Planning and Final Selection of schools (2019-2020)

Based on an exhaustive and meticulous discussion with the Head of the institutions and science teachers of government aided/sponsored schools of five (05) districts namely, East Midnapore, West Midnapore, Hooghly, Kolkata and Murshidabad, the final list of as many as sixteen schools were identified for this year. The teachers of the schools were apprised of the utility of the residential workshops along with rationale of such noble initiative which is never possible in regular school platform.

East Midnapore	West Midnapore	Hooghly	Murshidabad	Kolkata
<ul style="list-style-type: none"> <li>Chaknan Pallishree Sikshaniketan</li> </ul>	<ul style="list-style-type: none"> <li>Kharagpur Silver Jubilee High School</li> </ul>	<ul style="list-style-type: none"> <li>Sekendarpur Rai K.P. Pal Bahadur HS</li> </ul>	<ul style="list-style-type: none"> <li>Behrampore MK High School</li> </ul>	<ul style="list-style-type: none"> <li>Jadavpur Vidyapith</li> </ul>
<ul style="list-style-type: none"> <li>Satmile High School</li> </ul>	<ul style="list-style-type: none"> <li>Kharagpur South Side Girls' High School</li> </ul>	<ul style="list-style-type: none"> <li>Panjipukur Smriti Vidyapith</li> </ul>	<ul style="list-style-type: none"> <li>Gorabazar Iswar Chandra Institution</li> </ul>	
	<ul style="list-style-type: none"> <li>Kharagpur A P High School</li> </ul>	<ul style="list-style-type: none"> <li>Hooghly Branch Government High School</li> </ul>	<ul style="list-style-type: none"> <li>Lalgola SM Girls' High School (HS)</li> </ul>	
		<ul style="list-style-type: none"> <li>Serampore Union Institution</li> </ul>	<ul style="list-style-type: none"> <li>Laskarpur High School</li> </ul>	
		<ul style="list-style-type: none"> <li>Mahesh Sri Ramakrishna Ashram Vivekananda Vidyalaya</li> </ul>	<ul style="list-style-type: none"> <li>Lalgola Mahesh Narayan Academy</li> </ul>	



## Gender distribution of participants of 2018-19 batch



## WBDS workshops held in 2019 at a glance

Timeline	Particulars of Workshops
February to March, 2019	Advanced Science Workshops for selected students (5 workshops for 5 days each, involving students from 15 schools).
February, 2019	Science Orientation workshop for 60 underprivileged students from Eklavya Model School, Jhargram held at JBNSTS Campus.
April, 2019	a) Science orientation workshop for three days involving 66 students from different Kolkata based institutions. b) Science orientation workshop for three days involving 60 students from 10 different schools of East Midnapore held in Satmile High School, Contai.
May, 2019	Science orientation workshop for three days involving 60 students from 10 different schools of Alipurduar held in Railway Higher Secondary School, Alipurduar.
July – September, 2019	5 Science Orientation Residential Workshops around 300 middle school students from 16 schools of districts namely, East Midnapore, West Midnapore, Hooghly, Kolkata and Murshidabad (2019-2020 batch).



## Mentors list

The following mentors have guided the participants through innovative methods in keeping with the existing school curriculum and syllabus. JBNSTS humbly acknowledges the role of mentors, teachers and facilitators in helping the students to gain competence over various science subjects thereby contributing to their academic strength.

- Dr. Abhishek Mukherjee; Maulana Azad College, Kolkata
- Dr. Abhrajyoti Ghosh, Bose Institute, Kolkata
- Dr. Arati Mukhopadhyay; Howrah Jogesh Chandra Girls' School
- Dr. Arindam Bhattacharyya, University of Calcutta, Kolkata
- Dr. Dipanjali Majumdar, CSIR-NEERI, Kolkata
- Dr. Goutam Basu, Bose Institute
- Dr. Punarbasu Chowdhury; University of Calcutta
- Dr. Subir Dasgupta; Maulana Azad College, Kolkata
- Dr. Abhijit Kar, Scientific Officer, JBNSTS
- Dr. Arnab Pramanik, JBNSTS
- Dr. Paromita Roy, Deputy Director, JBNSTS
- Dr. Pijush Basak; Junior Scientific Officer, JBNSTS
- Dr. Smarajit Manna, Student Adviser, JBNSTS
- Dr. Sohan Sengupta, University of Birmingham
- Mr. Dipankar Sarkar, JBNSTS
- Ms Anupama Sengupta; Jadavpur Sammilita Balika Vidyalaya, Kolkata
- Ms Chaitali Mukherjee; Santoshpur Rishi Aurobindo Girls' School, Kolkata
- Ms Smita Nandi, Art Teacher
- Ms. Deepmala Das; University of Calcutta
- Prof Parthasarathi Majumdar, RKM Vivekananda University, Belur
- Prof Shyamal Chakrabarti; University of Calcutta
- Smt Sampurna Bhattacharya, Musician, Kolkata
- Smt. Sanchari Chattopadhyay, JBNSTS
- Smt. Sweta Chakraborty, JBNSTS
- Sri Arup Sengupta; Garfa DNM High School, Kolkata
- Sri Biswarup Mitra; Dum Dum Kumar Ashutosh Institution (Main) Boys', Kolkata

- Sri Dipankar Karmakar, Art Teacher, Heritage School, Kolkata
- Sri Milan Chandra Gain; Uttar Rabindranagar Vivekananda H/S
- Sri Partha Pratim Roy; Senior Faculty, South Point High School, Kolkata
- Sri Pintu Kr. Sinha; Katwa K.D.I, Purba Bardhaman
- Sri Ranjan Das; University of Calcutta
- Sri Sabyasachi Banerjee; Musician, Kolkata
- Sri Saptarshi Mondal; Tangrakhali P.S.P High School (H.S)
- Sri Sekhar Banerjee (Self-employed Electronics specialist)
- Sri Siddhartha Sankar Chattopadhyay, Bidhannagar Govt. High School
- Sri Subhadeep Bose; Esteemed Reciter; Eklavya Model Residential School, Jhargram
- Sri Subir Bhattacharya, Dum Dum Kishore Bharati School, Kolkata

## Some interesting topics discussed and experiments demonstrated in the student's sessions

### Physical Science

- Solar Cells as a source of alternative energy
- Night sky viewing by telescope
- Archimedes Principle
- Momentum & Conservation
- Creation of color using primary colors
- Effect of air pressure and height on a free moving pendulum
- Bernoulli's Principle
- Principles of Sports Science.
- Making of pin-hole camera, microscope with single lens
- Reflection, Refraction, and total Internal Reflection
- Gravitational force, earth's rotation and spin motor of cricket ball
- Wise use of natural resources
- Preparation of colour using different chemical reactions
- Impact of heat and pressure on reactions
- Experiments on electric current
- Experiments on catalysts and indicators
- Acid-Base-indicators
- Impact of reactions



## Mathematics

- Finding the Area of Quadrilateral and Square Root Algorithm
- Area of polygon in term of rectangle, square, hexagon and octagon inscribed in a circle
- System of Real Numbers
- Geometrical Riders in the fold of word problem
- The reformation geometry using quadrants, plotting coordinates and finding equation for coordinates.
- Properties of triangle and its characteristics.
- Fractioning of quadratic function and Method of solving quadratic equation

## Life Science

- BMI & Body Temperature Mapping
- Plants Pigments
- Audiovisual exposure to the process of digestion with the experimentation of carbohydrate
- Determination of Pulse Rate
- Identification of cell, plant tissue
- Food Adulteration
- Quality of drinking water
- Identification of starch
- Microbial Activity: Benefits and harms
- Distribution of acidity in our alimentary canal.
- DNA structure and the application of DNA information
- Origin of Life
- Ecology and Biodiversity
- Health, Hygiene and Menstrual Cycle
- Our Environment: Aspects of climate change
- Microbes and Microscopy
- Origami representation of DNA double helix structure
- Foldscope preparation and demonstration



## Periodic Table seminar at BITM, Kolkata

Periodic Table, a brainchild of Dmitri Mendeleev is the underlying principle of chemical science which has its application in diverse periphery of chemistry. JBNSTS being a prominent talent search institute of India recognizes such landmarks of importance in the context of science education and research. An excellent program was organized by the school students where they constructed the periodic table with different elements considering their importance in real life scenario. Prof. (Dr) Maitree Bhattacharyya, Director, JBNSTS took an active initiative to organize the program with Birla Institute of Technological Museum, Kolkata.

The discussion delved over celebrating hundred years of periodic table in 2019 along its application in various spheres of life not only chemistry but physics and biology and also utilize the predictions and implications of this wonderful concept.





# JBNSTS TALENT ENRICHMENT PROGRAM

Exposure to  
Cutting-edge Research  
and Academia

## Talent Enrichment Program

Breeding platform for India's young scientists

### Genesis of the program

JBNSTS is an institute which plays a pivotal role in identification, motivation and nurturing of young minds in the field of science and technology since its inception. Amongst various nurturing programs of JBNSTS, Talent Enrichment Program for the budding scientists deserves special mention which was initially introduced for senior scholars selected from all over West Bengal. In recent times, this program has expanded manifold to include interested brilliant students of plus two level from all over West Bengal.

The Talent Enrichment Program provides the scholars with opportunity to interact with the eminent professionals, scientists and science practitioners of national and international repute at their research centres and esteemed institutions as well at JBNSTS. In addition, the program also enables activities like hands-on experiments, learning of data handling, and preparation of reports etc so that they can be empowered to work in any reputed laboratory of international standard.

### Methodology

- I. **Workshops and Seminars:** Workshops, symposia and seminars are organized by JBNSTS which act as catalysts to develop the scientific temper of the talented minds. The brilliant minds of the scholars are exposed to informative discourses of reputed scientific professionals, scientists and personalities of creative spectrum of the society. They are exposed to the challenging issues of the STEM field so that they can think science in global perspective and apply their text book knowledge to solve the real life problems.
- II. **Academic visits:** JBNSTS undertakes academic visits to provide the senior scholars not only with the opportunity to explore their talent in the field of cutting-edge research in renowned scientific organizations but also provides them with competency of laboratory set-up, coupled



with ideas of innovation and invention required for entrepreneurial venture in their career. Such exposure would help the talented minds to develop acumen in the field of therapeutics and advanced research functions of material science.

- III. Interaction with Scientists:** The program provides creates a platform wherein the students interact with the legendary scientists which are undoubtedly an excellent opportunity in their formative years.
- IV. Developing communication skill:** The program helps the talented students to develop and hone their communication skills which is a requisite measure for making science accessible to a large audience. Training is imparted to the participants so that they can acquire the art of informing, educating, and raising awareness of science-related topics amongst a wide scale of mass.



### Astronomy Camp and Training on Sky Observation

Astronomy and astrophysics have always generated profound attention amongst the talented young minds. In a bid to satiate the scientific temper of senior scholars of JBNSTS, a Talent Enrichment Program was held from 2<sup>nd</sup> of March to 4<sup>th</sup> of March, 2019 at Deul Park, West Bardhaman. The senior scholars were presented with enlightening lectures about the celestial features.

The objective of the program is to induct enthusiasm in the students regarding space



science, astrophysics etc. Furthermore, they were trained about various aspects of night sky viewing and practical usage of telescope. The snapshot of the entire program is follows.

Lecture sessions	Practical sessions
# Introduction to Star Charts; how to study them plus live demo of the same with the Virtual Sky.	# Naked eye observation, Introduction to Telescopes, description of the objects.
# Celestial Coordinate system etc.	# Identifying visible Constellations & using the telescope to observe bright objects, etc.
# Introduction to the Virtual Sky (Stellarium, etc).	# Telescope handling and usage.
	# Observation of some planets & early morning constellations.
	# Solar observation

### Visit of Research and academic institutions at Bangalore

An educational trip was organised by JBNSTS in Bangalore from 30<sup>th</sup> of June to 7<sup>th</sup> of July, 2019 comprising of forty-six senior scholars who are presently pursuing undergraduate studies in various fields of science and technology including medicine and engineering in various institutes all over West Bengal.

#### List of institutions visited

- National Aeronautics Limited (NAL)
- Raman Research Institute
- National Institute of Mental Health and Neuro-Sciences (NIMHANS)
- Various departments of Indian Institute of Science (IISc)
- Indian Institute of Astrophysics
- CREST campus, Hosekote
- Jawaharlal Nehru Centre For Advanced Scientific Research (JNCASR)
- National Center For Biological Sciences (NCBS)
- International Centre for Theoretical Sciences (ICTS)



#### Those Who Make Us Proud

'Those Who Make Us Proud' is a unique platform where JBNSTS scholars meet and interact with stalwarts from the diverse field not only from science, but also from other creative faculties like fine arts,



music etc. This program is an integral part of various enrichment programs of JBNSTS. The activity not only constitutes interaction with the distinguished scientists and practitioners but also cultivates the creative faculties of the talented scholars. A two-day seminar (30/03/2019-31/03/2019) was organised for JBNSTS senior scholars and Bigyani Kanya Medha Britti scholars who are currently pursuing different undergraduate courses in science in West Bengal.

### Glimpses of a specific program are given below:

Name of the speaker	Title of the lecture
Dr. Biman B Mandal Indian Institute of Technology, Guwahati	<b>Bioengineered Human organs &amp; Tissues</b>
Dr. Rahul Banerjee (Bhatnagar awardee) IISER-Kolkata	<b>Porous crystalline materials: Hydrogen Storage and CO<sub>2</sub> capture</b>
Dr. Kiranmoy Das Indian Statistical Institute, Kolkata	<b>From Inductive Science to Big data: Challenges and Opportunities</b>
Dr. Dipak Ghosh Emeritus Professor, Jadavpur University	<b>Matter, Dark matter and Doesn't Matter</b>
Dr. Suchanda Sar Disha Eye Hospital, Barrackpore	<b>Glaucoma- Silent Thief of Eyesight</b>
Dr. Sitabhra Sinha Institute of Mathematical Sciences, Chennai	<b>The whole world is more than the sum of its parts: An Exploration of Complex Systems</b>
Sri Debshankar Halder Esteemed Theatre and Film Personality	Interaction with scholars with a brief workshop
Ms. Srabani Sen Acclaimed Musician	Life with Rabindrasangeet

### Science workshop for talented students of Bengal

JBNSTS is a six decade old institution dedicated to the nation to nurture and motivate the promising students studying science to be carved out as the best human resources of our country. This time JBNSTS organized a five day workshop for the talented students of West Bengal under the financial support of Department of Science and Technology & Biotechnology, Government of West Bengal from 15<sup>th</sup> to 19<sup>th</sup> of March, 2019. This program was specially designed for the high school students of West Bengal who are in the top 1% in their Class 10 Board Examination (held in 2018) and studying Science in class XI. The initial two days of the workshop was held in Science City, Kolkata while the remaining program took place at JBNSTS campus.

The entire program comprised of an ensemble of esteemed scientists, teachers, professionals and experts from science who spoke about the diverse discipline of science. The students were exposed to the recent and modern trends of scientific innovation and interdisciplinary component of science



education by enthralling sessions on bioluminescence, architecture, nanotechnology, tissue engineering, to name a few. The participants were divided in several groups (based on their subject preference) and enjoyed hands-on experimental learning session in the laboratories of JBNSTS namely, *CV Raman Physics Laboratory, Material Laboratory, Rosalind Franklin Biotechnology Laboratory, Creativity Corner and Smart Classroom*. Overall, the program acted as a learning curve for the talented students who have listened to the lectures coupled with exciting laboratory activities. This was a residential workshop wherein students from remote villages as well from proper Kolkata participated in hands-on training program.



Eminent scientists like Prof. Maitree Bhattacharaya (Director, JBNSTS), Prof. Anuradha Lohia (VC, Presidency University, Kolkata), Prof. Samir Kumar Pal (Senior Professor, S N Bose National Centre for Basic Sciences, Kolkata), Prof. Naba Kumar Mandal (Saha Institute of Nuclear Physics, Kolkata),



Prof. Kankan Bhattacharyya (Visiting Professor, Physical Chemistry IISER, Bhopal), Prof. Subhamoy Maitra (Professor HAG Indian Statistical Institute, Kolkata), Prof. Amitava Gupta (Professor, Department of Power Engineering, Jadavpur University, Kolkata), Dr. Mitali Chatterjee (Professor, Dept. of Pharmacology Institute of Post Graduate Medical Education & Research, Kolkata) etc were the renowned mentors participated in the workshop.



### JBNSTS employees in awareness campaign for practicing and exploring science

JBNSTS is always committed to bridge the gap between the development of science and the lack of delivery system of the society. Adhering to the commitment towards social integration and social development, an awareness campaign was organised by the institute in the rural areas of Purba Medinipur. The initiative aimed to raise consciousness about science and its judicious application in our daily lives with regard to mitigating real-life problems.





# JBNSTS TEACHERS' TRAINING PROGRAM

Innovation in  
teaching & creation  
of new learning  
pedagogy

## TEACHERS' TRAINING PROGRAM

### Harnessing competence of our teachers

#### Genesis of the program

India remains on the threshold of innovation in science and technology. Various policies have been constituted to make education accessible to the learners; still education is not accessible to those who really want it. Several policies identify the learning crisis in science and mathematics education. The nation in the last few decades has gained considerable advances in science education. The enactment of fundamental modules and curriculums in STEM learning and development have ensured quality science education in the society. The shortcoming however remains about paucity of quality teaching resource persons who would comprehend the subjects in best possible manner and impart the knowledge to a plethora of learners.

Thus JBNSTS envisioned Teachers' Training Program to address this inadequacy of quality science teaching and appropriate enactment of science education as a means of effectively dealing with the practical problems of the society and thus envisaged a sustaining program under the support of Department of Science & Technology, Government of West Bengal.

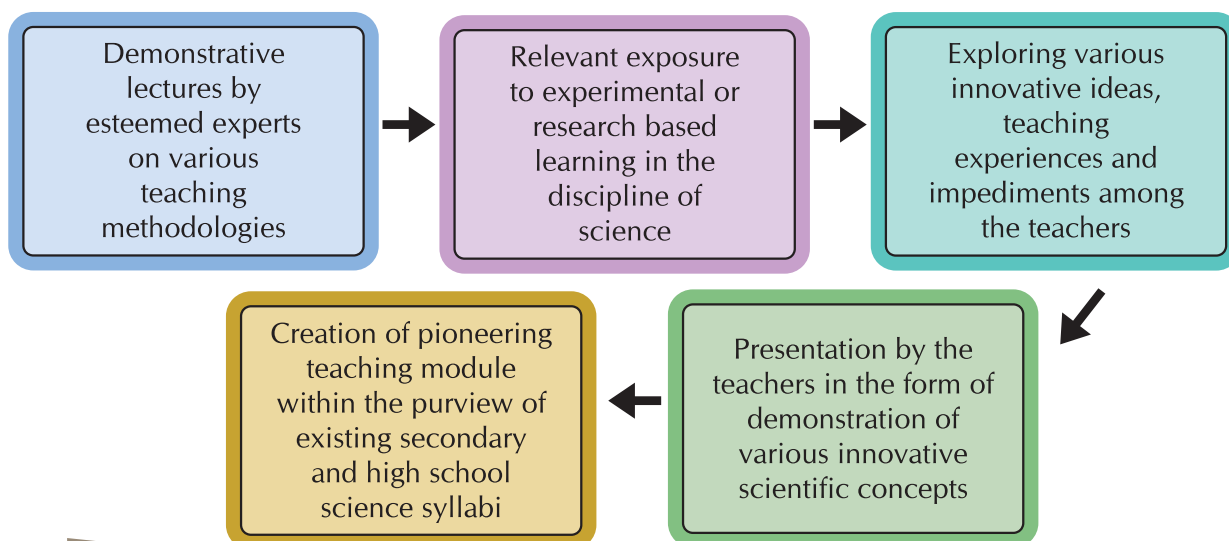
#### Pertinent interventions of Teachers' Training Program

- The JBNSTS Teachers' Training Program provides sustained professional development to the teaching facilitators to utilise their existing skills and knowledge for integration of dynamic science teaching modules for secondary and high school students.



- To strengthen the teaching skills amongst teachers for better comprehension of the science subjects and imparting the same to the students/ learners.
- Incorporate advanced and innovative teaching methods in the ambit of STEM teaching modules.
- To appreciate interdisciplinary facet of science and technology and judicious application of the same in the existing middle and high school curriculum.
- To encourage teachers to explore innovative teaching methods based on existing syllabi and curriculum which would generate interest amongst the learners.
- JBNSTS has created a platform wherein the teaching professionals can interact with legendary science practitioners/ faculties so that they can build-up better teaching methodologies, receive feedback and thereby develop new learning avenues for the students.

### Framework of the program



## Snapshot of JBNSTS-WBDST Science Teachers' Training Workshop

JBNSTS organized Teachers' Training Program at Kolkata from 30<sup>th</sup> of January, 2019 to 1<sup>st</sup> of February, 2019 for sixty-six (66) middle and senior school teachers from all West Bengal. The teachers participated in a holistic interaction with esteemed faculty resource persons and also explored activity-based learning through simplified practical experiments at JBNSTS state-of-the-art laboratories. On the concluding day, the participants presented their lesson plans and proposed teaching modules experiment data before the esteemed panel of experts who evaluated the work of the teachers. Overall, the workshop was instrumental to develop the teaching aptitudes of the school teachers and successful propagation of innovative teaching methodologies which would benefit substantial number of students across West Bengal.

### List of Participating Institutions

- Agarpara Mahajati Vidyapith
- Ariadaha Kalachand High School
- Bagbazar Multipurpose Girl's High School
- Bagmari Maniktala Govt. Sponsored Boys
- Banamalipur Priyanath Institution
- Behala Shyama Sundari Vidyapith (H.S)
- Belgachia Monohar Academy
- Baruipur High School
- Budge Budge P. K. High School
- Dumdum Baidyanath Institution
- Dumdum Road Multipurpose School For Girls





- Garia Barada Prasad High School
- Garfa D.N.M High School (Boys)
- Haltu High School for Girls
- Hindu School
- Jadavpur Vidyapith
- Jaynagar Institution
- Kakdwip Jnanadamoyee Vidyapith (H.S)
- Khardah Shibnath High School
- Muralidhar Girls School
- Noapara Rashbihari Institution
- Rammohan Vidyamandir for Girls
- Sailendra Sirkar Vidyalaya (Govt. Spons.)
- Sanghamitra Vidyalaya High
- Santoshpur Rishi Aurobindo Balika Vidyapith
- Sarsuna High School
- Sir Romesh Mitter Girls School (H.S)



## List of Mentors

- Dr. Laxmi Narayan Mandal *Ex-Principal of Suri Vidyasagar College, Birbhum*
- Dr. Abhijit Kar *Scientific Officer, JBNSTS*
- Dr. Abhisek Basu *Behala College*
- Dr. Nantu Sarkar *University of Calcutta*
- Dr. Paromita Roy *Deputy Director, JBNSTS*
- Dr. Partha Karmakar *Deputy Secretary (Academic) WBBSE*
- Dr. Riddhi Majumder *St. Xavier's College, Kolkata*
- Dr. Sanatan Chattopadhyay *University of Calcutta*
- Dr. Smarajit Manna *Student Advisor, JBNSTS*
- Dr. Sutapa Sanyal *Krishnagar Government College*
- Dr. Uttam Ghosh *University of Calcutta*
- Mr. Partha Pratim Roy *South Point High School*
- Mr. Samar Bagchi *Former Director, BITM*
- Prof. Subir Chandra Dasgupta *Maulana Azad College*





# JBNSTS BIOTECHNOLOGY PROGRAM FOR HIGH SCHOOL STUDENTS

Hands-on training  
in cutting-edge  
techniques : unfolding  
new career paths

# Biotechnology Program for high school students

## The unique opportunity

### Origin of the program

In the recent years, Biotechnology has emerged to be a popular subject for students in their further studies and academic pursuits. Since inception, JBNSTS has been fostering the talented students of West Bengal to develop a pool of talent for the creation of self-reliant India. The biotechnology laboratory was established with an aim to impart hands-on Biotechnological experimental experience and expose the scientific faculties of a student to cutting-edge technology and innovation related to the existing text book syllabus of the subject. The Biotechnology laboratory has been created and developed under the financial support of the Department of Science & Technology and Biotechnology, Government of West Bengal and is named after the legendary scientist Rosalind Franklin.

### Salient features of the Biotechnology laboratory

- The JBNSTS biotechnology laboratory is well equipped with instruments and apparatus to facilitate research and experimental activities by the students.
- The laboratory aims to expose the students to cutting-edge research techniques through experiments and training modules for better cognition of the intricacies of the subject.



High school students learning the function of micropipettes in the Biotechnology laboratory

- To inculcate the students who belong both from town and rural spectrum with a notion of innovation and to work for industry academia interface and developing entrepreneurship.
- To empower the students with the ideas of developing drugs and developing expertise in diagnostic methods.



Students engrossed in experiment of Agarose Gel Electrophoresis to detect DNA

### JBNSTS Biotechnology workshop

The biotechnology workshop has created a platform wherein the talented students currently pursuing science (with affinity towards Biological Sciences) in higher secondary curriculum is exposed to modern innovative techniques of biological sciences and experiments which is otherwise not feasible in the ambit of school curriculum. Furthermore, the objectives of the workshop are elucidated below:

- **Exposure to informative lectures:** The intrusive talented minds are exposed to illuminating lectures which endow them with the vibrating ideas of invention and innovation. The students interact with the eminent experts of the field and are apprised of various application and impact of the subject meant for solving real-life problems and predicaments of the ever-changing society, with agriculture and industry.
- **Engagement in hands-on experiments (activity-based learning):** The participants perform a series of experiments in the state-of-the-art Rosalind Franklin Biotechnology Laboratory under the guidance of experts which makes them conversant about the practical aspects of the subject. They are also informed of various techniques and methods of performing rather intricate experiments. Such holistic intervention would guide them with an ingenuity to solve the real and practical problems related to health, agriculture and environment.

- **Awareness of the talented minds over further academic pursuits:** The facilitators provide an orientation to the students regarding the scope and future prospects of Biotechnology which enlightens the talented students over the spectrum of the subject that would assist them for placement in their professional career and further academic career.



Extraction of DNA from Bacteria

## Glimpses of hands-on experiments performed by the students

- Bacterial Growth Kinetics by using Spectrophotometer
- Genomic DNA Isolation
- Polymerase Chain Reaction (PCR) of a bacterial gene
- Agarose Gel Electrophoresis of Genomic DNA and PCR product
- Investigation of phenolic compound from Tea
- Estimation of the Antioxidant property of Tea and fruits
- Estimation of Curcumin by Thin-layer Chromatography
- Separation of Pigments of a green tea
- Estimation of antimicrobial properties of different plant extract and natural compounds.

## List of mentors and facilitators

The following esteemed faculties have mentored the students and participants since inception of the program.

- Dr. Abhrajyoti Ghosh, Department of Biochemistry, Bose Institute, Kolkata
- Dr. Samudra Prosad Banik, Department of Microbiology, Maulana Azad College, Kolkata
- Dr. Sanghamitra Sengupta, Department of Biochemistry, University of Calcutta, Kolkata
- Dr. Anupama Ghosh, Department of Biochemistry, Bose Institute, Kolkata



Estimating the concentration of bacterial DNA sample using UV visible spectrophotometer

- Sri Sudipta Chatterjee, Department of Microbiology, Bidhannagar College, Kolkata
- Dr. Pijush Basak, JBNSTS
- Dr. Arnab Pramanik, JBNSTS
- Dr. Sohan Sengupta, University of Birmingham
- Dr. Rituparna De, JBNSTS
- Sri Sudip Nag, JBNSTS

### List of schools participated in the workshop

- Ballygunge Govt. High School, Kolkata
- Gokhale Memorial High School, Kolkata
- Jadavpur Vidyapith, Kolkata
- Kamala Girls' High School, Kolkata
- New Alipore Multipurpose School, Kolkata
- Panjipukur Srimati Tulshi Devi Smriti Vidyapith (H.S.) High School
- Sailendra Sirkar Vidyalaya, Kolkata
- Sakhawat Memorial Govt. Girls' High School, Kolkata
- Santoshpur Rishi Aurobindo Balika Vidyapith, Kolkata

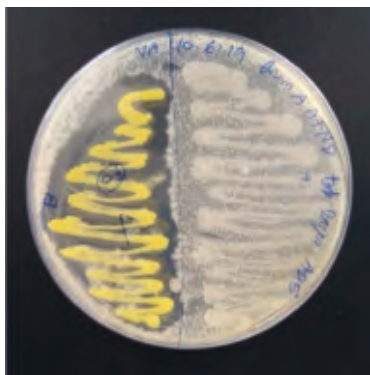
However, to add to this context that this newly developed lessons are also favourite resource for the high school teachers.



Director and Mentors of JBNSTS along with participants and Teachers of Biotechnology workshop.

## Achievements of Biotechnology Laboratory at JBNSTS

We have been successful to isolate some bacterial strains from the soil samples of Alipurduar (Buxa Forest, Atiabari Tea Estate, Kalchini, Rajabhatkhawa and Jayanti River). Isolated bacterial strains were screened for the production of some important bioactivity such as antimicrobial activity and biofilm formation which may have significant implication. About 19 bacterial strains have been selected by molecular identification technique. 16s rRNA gene sequencing data were submitted in the NCBI database which is a public domain.



Isolated bacterial colonies producing antimicrobial compounds indicating clear zone of inhibition against test organism *Escherichia coli*

### Bacterial strains isolated from different sites of Alipurduar

Sl. No.	Isolates name	Strain identified based on 16s rRNA gene	NCBI accession No.
1.	JBA2	<i>Chryseobacterium ginsenosidimutans</i>	MN788707
2.	JBA3	<i>Bacillus zanthoxyli</i>	MN788708
3.	JBA4	<i>Bacillus aryabhatai</i>	MN788709
4.	JBA5	<i>Sphingomonas paucimobilis</i>	MN788710
5.	JBA6	<i>Pseudomonas aeruginosa</i>	MN788711
6.	JBA7	<i>Bacillus cereus</i>	Mn788712
7.	JBA8	<i>Sporosarcina koreensis</i>	Mn788713
8.	JBA9	<i>Bacillus velezensis</i>	MN788714
9.	JBA10	<i>Burkholderia territorii</i>	MN788715
10.	JBA20	<i>Bacillus altitudinis</i>	MN788716
11.	JBA21	<i>Solibacillus isronensis</i>	MN788717
12.	JBA22	<i>Sphingomonas azotifigens</i>	MN788718
13.	JBA23	<i>Bacillus tequilensis</i>	MN788719
14.	JBA24	<i>Arthrobacter psychrochitiniphilus</i>	Mn788720
15.	JBA25	<i>Bacillus pseudomycoides</i>	MN788721
16.	JBA27	<i>Bacillus wiedmannii</i>	MN788722
17.	JBA28	<i>Bacillus cereus</i>	MN788723
18.	JBA29	<i>Bacillus manliponensis</i>	MN788724
19.	JBA46	<i>Bacillus pseudomycoides</i>	MN788725





# JBNSTS DST INSPIRE SCIENCE PROGRAM

Nurturing top  
one percent of  
India's talent



## JBNSTS-DST INSPIRE SCIENCE CAMP

Holistic development of India's best minds



### Formulation of INSPIRE Program

Innovation in Science Pursuit for Inspired Research (INSPIRE) is a novel initiative introduced by Department of Science and Technology (Government of India) in 2009 to enthuse the top one per cent talented students of the country currently pursuing science in (10+2) standard to research in science and technology which in turn would be clinical to form a pool of excellent human resources of the nation.

### Concoction of JBNSTS and DST INSPIRE Program

JBNSTS is an institute dedicated to the nation which has been meticulously involved in unearthing talents and establishing them in the field of science and technology through innovative ways based on STEM modules. The institute has formed path breaking schemes and initiatives meant for inclusive science learning for the talented minds of the state.

INSPIRE initiative on the other hand, aims to motivate the talented science learners to pursue science in their formative years and undertake research in higher education. Thus it's a successful synthesis which have successfully discharged fifty eight INSPIRE science camps till date. **JBNSTS by virtue of competence and legacy has assumed to be India's foremost centre of INSPIRE Science Camp.**



### Six-pronged process of nurturing young talents

The following explicates ways of nurturing the interns who belong to the top one per cent talented pool of students.

- a) **Exposure to scientific lectures/discourses:** The participants are exposed to riveting and inspiring theoretical based lecture sessions by stalwarts in the field of science and technology. The topics range from basic sciences to engineering and medicine, which stimulates the scientific ingenuity of the students.
- b) **Practical/ Hands-on training:** The participants gain valuable exposure to the diverse practical aspects of various science subjects in JBNSTS laboratory facilities namely, Computer Laboratory-cum-Smart Classroom, Rosalind Franklin Biotechnology Laboratory, Creativity Corner, CV Raman Physics Laboratory etc. The participants are engaged in different activities like computational modeling etc. which is otherwise not possible in the existing school curriculum and sphere.
- c) **Visit to science research institutions:** Educational trips are organized by JBNSTS to science research based institutions to expose the participants to various avenues of cutting-edge



research. This exposure develops the talented minds who till now have studied the fundamental aspects of science subjects in school. Now they can explore methodologies to solve real-life problems. The institutes are namely; Variable Energy Cyclotron Centre (VECC) Kolkata, Center for Research in Nanoscience and Nanotechnology (University of Calcutta) Kolkata, Indian Association for the Cultivation of Science (IACS) Kolkata, Indian Institute of Chemical Biology (IICB) Kolkata, Birla Industrial & Technological Museum (BITM) Kolkata, to name a few.

- d) **Exposure to myriad avenues of popular science and personality development:** Debates, group interactions are held with esteemed professionals from various fields to explore the nuances of emerging trends of biomedical research, issues and ramifications of biodiversity, environment and climate change. Moreover, counseling and personality development sessions are also conducted to ensure a holistic development of the interns.
- e) **Presentation of group projects:** In addition to that, on the last day of the workshop the participants present a detailed analysis based on the hands-on experiments they perform. The solution proposed may or may not have an absolute answer. The interns defend the proposition



before a panel of esteemed scientists and practitioners. This ideally gauges the spectrum of intelligence and innovative acumen of the talented students when posed with an open-ended problem.

- f) **Evening session to develop their minds:** Various brain-storming, debates and extempore sessions on relevant and emerging social issues are being held at evening which aims to inculcate the spirit of group activity, teamwork amongst the interns. These activities ensure overall development of the participants in their formative years.

## Glimpse of 58<sup>th</sup> JBNSTS- INSPIRE Science Camp 2019

Timeline	Number of participating institutes	Number of Interns participated
July 22-26, 2019	17	110

### Snapshot of topics discussed and hands-on activity performed in the camp

Title of the Lecture/ Topic	Name of the Mentor
<i>Physics in Climate Change</i>	Prof. Sibaji Raha, Bose Institute, Kolkata
<i>Care is an Act, Act like your care</i>	Dr. Punarbasu Chaudhuri, University of Calcutta, Kolkata
<i>The Inevitability of More and the Reality of Less</i>	Dr Anurag Danda, Sr. Advisor, WWF India
<i>How to Make an image of a Block Hole</i>	Dr. Pratik Majumdar, Saha Institute of Nuclear Physics, Kolkata
<i>The Story of the periodic table</i>	Dr. Sayam Sen Gupta, IISER-Kolkata
<i>Nucleus of a cell and trafficking</i>	Dr Kaushik Sengupta, Saha Institute of Nuclear Physics, Kolkata
<i>Which way the train will go</i>	Dr. Koushik Dutta, Saha Institute of Nuclear Physics, Kolkata
<i>Application of Genetic and Molecular Techniques in Health &amp; Medicine</i>	Dr. Sanghamitra Sengupta, University of Calcutta, Kolkata
<i>Exploring Antarctica: Adventure and Science</i>	Dr Santanu Bose, Presidency University, Kolkata
<i>One, two, three, ....., infinity</i>	Dr. Pradipta Bandyopadhyay, Indian Statistical Institute, Kolkata
<i>Anthropocene and Human Diseases</i>	Dr. Partha Chakraborty, IICB, Kolkata

***Bohr's Atomic Theory-Atomic Spectroscopy-  
Molecular Spectroscopy***

Prof. Samita Basu,  
Saha Institute of Nuclear Physics, Kolkata

***Science behind Toys***

Prof. Amitava Gupta,  
Jadavpur University, Kolkata

***The student scientist : What works and  
what doesn't***

Dr. Paromita Roy, Deputy Director, JBNSTS,  
Kolkata

***Chemistry: Challenges, Prospects and Scopes***

Dr. Subhajit Bandyopadhyay,  
IISER-Kolkata

***Fun, Puzzle and Paradox***

Dr. Ashok Kumar Nanda,  
IISER-Kolkata

***Activity Session on Physics, Chemistry,  
Material Science & Biotechnology***

Dr. Suman Chakraborty,  
SNBNCBS, Kolkata

Dr. Smarajit Manna, JBNSTS

Dr. Abhijit Kar, JBNSTS

Dr. Arnab Pramanik, JBNSTS

Dr. Pijush Basak, JBNSTS

## Factsheet of JBNSTS DST-INSPIRE Camps since inception

Timeline	2009-2019
Total number of Camps	58
Total Number of Interns (5453)	Male : 3598 + Female: 1855
Total number of schools participated	748
Total number of mentors	418





# JBNSTS CELEBRATION OF SPECIAL EVENTS

Appreciation of diverse  
human values in  
the ambit of science

## Science Day Celebration at JBNSTS

Since inception, JBNSTS has promoted and observed various prominent occasions and events in the periphery of science and technology. This time, the institute organized a one day program marking the occasion of Science Day on 28<sup>th</sup> of February, 2019 at JBNSTS.

The rationale of the program was to stimulate the enthusiastic talents and intrusive minds who are in their formative years about the importance of the day. JBNSTS welcomed the participating students and apprised them about the discovery of the legendary Raman Effect and the creator of the discovery, Sir C V Raman. A quiz program was also held for the young minds of district students which turned out to be an informative and learning curve for the students who are on the threshold of higher education in the trajectory of science.





## STATE YOUTH SCIENCE FAIR-2019

In association with JBNSTS

The Honb'le Chief Minister of West Bengal, Ms. Mamata Banerjee has been instrumental to initiate commendable programs in the discipline of science and technology for the talented youths of our state. Likewise, JBNSTS upholds an illustrious legacy of more than sixty years of identifying, motivating and nurturing the talented minds of our state as enshrined in its objective with the mission to harness the inherent faculties of a student and foster innovation in the trajectory of science which is in conformity to the vision of our Honb'le Chief Minister. The program was organized by Department of Youth Services and Sports,



Dr. Biman Bihari Mondal presenting lecture at “Meet the Scientist” program



Dignitaries with Director, JBNSTS at the dias of State Science Fair

Government of West Bengal. JBNSTS was the main collaborator of the program which was held at Netaji Indoor Stadium, Kolkata from 17<sup>th</sup> of November to 19<sup>th</sup> of November, 2019.

The program components were mainly, competitive exhibition of science models by students of secondary, higher secondary and university level respectively from all over West Bengal along with quiz show. The program was



Demonstration of DNA at JBNSTS stall



Principal Secretary, Department of Youth Services & Sports, Government of West Bengal visiting JBNSTS stall

inaugurated by Dr. Partha Chatterjee, Minister for Education Government of West Bengal, Sri Aroop Biswas, Minister of Public Works and Youth Affairs & Sports, Sri Laxmi Ratan Shukla, Minister of State for Youth Affairs and Sports, Government of West Bengal, Prof. (Dr.) Maitree Bhattacharyya, Director of JBNSTS and several other academic luminaries. JBNSTS demonstrated experiments like photosynthesis, blood group sampling, and origami

representation of DNA structure in their enclosure/kiosk and also apprised the students, teachers and parents about various innovative techniques of science education and research in varied fields of science and technology to solve practical issues pertaining to the society, which aggrandized the knowledge base of the students and drew appreciation from the parents and teachers as well.



Interested students thronging JBNSTS stall at State Science Fair

JBNSTS portrayed an enterprising role in the program by organizing the session “Meet the Scientist”. The session commenced with Mr. Abir Atarthy, a computer professional and expert in IoT (Internet of Things) illustrated the vulnerabilities of cyber and virtual world and interacted with the participants about mitigation of emerging cyber threats. Dr. Biman Behari Mandal (associated with IIT Guwahati) was the speaker on 18<sup>th</sup> of November who presented an exhilarating discourse titled 'Lab Grown Organ and Tissue' on Bioengineering and its judicious application in society.

On the concluding day, Shri Aroop Biswas, Hon'ble Minister in Charge, Department of Public Works and Youth Affairs & Sports presided over the Valediction and prize distribution ceremony in the august presence of Sri Laxmi Ratan Shukla, Minister of State for Youth Affairs and Sports, Prof. Dhruvajyoti Chattopadhyay, Vice Chancellor, Amity University, Kolkata and other esteemed guests. The science fair created a platform for boisterous and talented young minds from all over the state not only to showcase their models by exploring various innovative techniques but also paved an excellent opportunity to interact with esteemed scientists and science practitioners of repute which would enhance their scientific temper and ingenuity, by and large.

Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less-

**Marie Curie**

## CUTTING EDGE SCIENCE FOR YOUNG TALENTS

JBNSTS organized a science orientation workshop titled “Cutting Edge Science for Young Talents” for the students who have qualified their Board examinations in the current year. The program was held in two phases to accommodate all the interested students from all over West Bengal. As many 154 talented students participated in the workshops who belong to top convent schools of Kolkata as well from districts and remote villages. They are boys and girls studying both in English and Bengali medium. The program paved to be a learning curve for the talented students who are on the threshold of higher education in the discipline of science. They were enthralled to interact with the acclaimed teachers and legendary science practitioners and professionals about the modern and emerging trends in science and technologies. The students also enjoyed the hands-on experimental activities (based on their subject preferences) in JBNSTS Rosalind Franklin Biotechnology Laboratory, Creativity Corner and Sir CV Raman Physics Laboratory which is otherwise not available in the existing school scheme of things. They had brainstorming sessions in the areas of stem cell research, astrophysics, material chemistry and many others.

Furthermore, an interactive session with the parents was conducted by JBNSTS as a part of this program which tried to address the apprehensions, and multifarious issues that students normally encounter in the formative years. Reputed academicians, counseling psychologists and JBNSTS experts engaged into an inclusive discussion with the parents of the participants regarding coping strategies, coping mechanisms of dealing with the predicament to ensure a holistic growth and development of the student who can take the challenges of life. The participants belonging to the following schools participated in both the workshops enthusiastically.



An inspiring session on Medical Science & Society

- Hijuli Sikshaniketan (H.S.), Nadia
- Jhargram Kumud Kumara Institution
- Barrackpore Govt. High School, North 24 Parganas
- Koriasole High School, West Midnapore
- Kautala Ramakrishna Ashram High School, South 24 Pgs
- Lalgopal H.S. School, Nadia
- Nalhati Hari Prasad High School, Birbhum
- Purnanagar P.C. High School (H.S.), Nadia
- Purulia Ramakrishna Mission Vidyapith,
- Railway Higher Secondary School, Alipurduar
- Ranaghat Debnath Institution For Girls, Nadia
- Ranaghat P.C. High School, Nadia
- Rani Binode Manjari Govt. Girls School, Jhargram
- Satmile High School, East Midnapore
- Silda Radhachandran Institution, Jhargram
- Singur Golap Mohini Mallick Girls High School, Hooghly
- Sodepur High School (H.S.), North 24 Parganas
- Mahesh Sri Ramkrishna Vidyalaya (H.S.)
- Modern English Academy, Barrackpore, Kolkata
- Ballygunge Government High School, Kolkata
- Bidhannagar Govt. High School, Kolkata
- Sakhawat Memorial Govt. Girls High School, Kolkata
- New Alipore Multipurpose School (Govt. Sponsored), Kolkata
- Panchasayar Sikshaniketan, Kolkata
- Patha Bhavan, Kolkata
- Jadavpur Vidyapith, Kolkata
- Kamala Girls School, Kolkata
- Apeejay School, Park Street, Kolkata
- Apeejay School, Salt Lake, Kolkata
- B. D. Memorial International, Kolkata
- Bhavan's Gaangabux Kanoria Vidyamandir, Kolkata
- Delhi Public School, Ruby Park, Kolkata
- Garden High School, Kolkata
- Hariyana Vidyamandir, Kolkata
- Mahadevi Birla World Academy, Kolkata
- Modern High School For Girls, Kolkata
- National Gems H.S. School, Kolkata
- Nava Nalanda High School, Kolkata
- Our Lady Queen Of The Mission School, Kolkata
- Ramakrishna Mission Vidyalaya, Narendrapur
- Salt Lake School, Kolkata
- St. Lawrence High School, Kolkata
- St. Xavier's Collegiate School, Kolkata
- St. Xavier's Institution, Panihati, North 24 Pgs
- The BSS School, Kolkata
- The Future Foundation School, Kolkata
- Vision International School, Uttarpara,
- Vivekananda Mission School, Joka, Kolkata
- Don Bosco, (Park Circus), Kolkata
- South Point High School, Kolkata



Topic of Lecture and Titles	Name of the Speaker
<i>Welcome address and inaugural speech</i>	<b>Prof. (Dr.) Maitree Bhattacharyya</b> Director, JBNSTS, Kolkata
<i>In Search of a Hidden World</i>	<b>Professor Soumitra Sengupta</b> IACS, Kolkata
<i>The Origin of Mass: From Quarks to Cosmos</i>	
<i>Molecular Understanding of Life</i>	<b>Dr. Suvendra Bhattacharyya</b> IICB, Kolkata
<i>In the Wonderland of Speech Processing</i>	<b>Professor Tapan Kumar Basu</b> IIT, Kharagpur
<i>Creativity in Chemistry</i>	<b>Professor Subhajit Bandyopadhyay</b> IISER-Kolkata
<i>From the Earth to the Moon</i>	<b>Professor Amitava Gupta</b> Jadavpur University, Kolkata
<i>Bohr's Atomic Theory- Atomic Spectroscopy- Molecular Spectroscopy</i>	<b>Professor Samita Basu</b> Saha Institute of Nuclear Physics, Kolkata
<i>Measuring Uncertainty and Randomness</i>	<b>Dr. Kiranmoy Das</b> Indian Statistical Institute, Kolkata
<i>Lecture on Medical Science</i>	<b>Professor (Dr.) Bhabatosh Biswas</b> Former Vice Chancellor, The West Bengal University of Health Sciences, Kolkata
<i>The Mass of Small Things</i>	<b>Professor Amitava Raychaudhuri</b> Sir Tarak Nath Palit Professor of Physics Department of Physics, University of Calcutta
<i>Impact of Recombinant DNA Technology in Health &amp; Medicine</i>	<b>Dr. Sanghamitra Sengupta</b> University of Calcutta
<i>How to make an Image of Black Hole</i>	<b>Dr. Pratik Majumdar</b> Saha Institute of Nuclear Physics, Kolkata
<i>Interactive session on Mathematics</i>	<b>Dr. Uttam Ghosh</b> University of Calcutta
<i>Chemists Dream of Little Machine</i>	<b>Dr. Pradyut Ghosh</b> IACS, Kolkata

### ***Anthropocene & Human Disease***

**Dr. Partha Chakrabarti**

IICB, Kolkata

The laboratory sessions followed by student's presentation was a challenging platform for these brilliant students which enabled them to explore the practical aspects of science subjects which is not possible in regular school curriculum.




Physics made lucid with the legendary professor



Counselling session at JBNSTS for the parents of the participants



An informative session on Molecular Biology



Talented participants engrossed in an experiment on Physical Science



The highest education is that which does not merely give us information but makes our life in harmony with all existence-

**Rabindranath Tagore**



## Celebration of Talent: Annual Award Ceremony

On 22<sup>nd</sup> of December, 2018 the annual award ceremony of JBNSTS was held at Derozio Hall located at Presidency University, Kolkata. The year-long endeavour of JBNSTS transpired to an event of inspiring lectures coupled with award distribution to the scholarship awardees. The ceremony was divided into two segments, namely academic session and award session, respectively.

Prof. (Dr.) Maitree Bhattacharyya, the director of JBNSTS, delivered the welcoming address. Prof. (Dr.) Anuradha Lohia Vice Chancellor Presidency University, Kolkata, Prof. (Dr.) Dhruvajyoti Chattopadhyay Vice Chancellor Amity University, Kolkata, Prof. (Dr.) Partha Pratim Majumder Distinguished Professor, NIBMG, Kalyani and Dr. Partha Karmakar Deputy Secretary, WBBSE were the eminent



scientists who embellished the program by rendering their gracious presence.

Dr. Aditi Sen De, a vibrant woman scientist, the Shantiswarup Bhatnagar Awardee of 2018 graced the occasion. The topic of her lecture was “*Quantum Technologies*”. The next speaker was Prof. Sabyasachi Sarkar, retired Professor of IIT Kanpur and presently Honorary Visiting Professor, IEST, Shibpur. He spoke about “*21<sup>st</sup> Century Drug Delivery: Coal to Nano Carbon to Deliver Drug at Neuron Site in Brain*”.

The recipient of best school award in junior and senior scholarship categories went to Ramakrishna Mission Vidyalaya, Narendrapur. The special award for district school went to DAV Model School, Durgapur (Paschim Burdwan), Gorabazar Iswar Chandra Institution (Murshidabad) and Bankura Banga Vidyalaya (Bankura). South Point High School and Delhi Public School (Ruby Park), Kolkata was also felicitated for their remarkable performance in Junior Scholarship category 2018. Burdwan Municipal High School (Burdwan) was the recipient of special district school award in the Senior Scholarship category 2018. Top 10 Boys and top 10 Girl scholars (in Senior Scholarship Program) were awarded one laptop each to facilitate their further academic pursuits. The entire program served as an enormous motivational and inspirational event for the parents, teachers and others from remote districts who were present at the occasion. Dr Paromita Roy, Deputy Director, JBNSTS offered the vote of thanks which was followed by National Anthem to conclude the august ceremony.



## MOMENTS OF GLORY.....



The visit of our Honorable Chief Minister Ms. Mamata Banerjee is considered to be one of the most glorifying moments in the annals of JBNSTS which bears a distinctive legacy of more than sixty years. Her brief interaction with the talented participants during a science workshop held in 2015 at JBNSTS left a deep impact amongst the talented students of our state. As the institute surges ahead with diverse projects and path-breaking programs in the trajectory of science and technology, we humbly thank her for her leadership and guidance which acts a beacon of support to JBNSTS, by and large.





Inauguration of State Youth Science Fair 2019, Kolkata in the august presence of Dr. Partha Chatterjee, Hon'ble Minister of Education, Government of West Bengal, Sri Aroop Biswas, Hon'ble Minister of Public Works, Sports and Youth Affairs, Sri Laxmi Ratan Shukla, Hon'ble Minister of State, Sports and Youth Affairs, Govt. of West Bengal, Prof. Suranjan Das, Vice-Chancellor, Jadavpur university, Prof. Saikat Maitra, Vice Chancellor, Moulana Abul Kalam Azad University of Technology, West Bengal and Prof. (Dr) Maitree Bhattacharyya, Director, JBNSTS

Dr. Smarajit Manna, Student Advisor JBNSTS explaining JBNSTS Physics Laboratory setup



Director, JBNSTS presenting the organizational activities and achievements to Mr. Barun Roy, Principal secretary, Mr. Dipankar Das, Principal Scientist, Dr. Sharmistha Pal, Scientist from Department of Science and Technology and Biotechnology

## ACTIVITY CALENDAR 2019

### December 2018

**22/12/2018: 59<sup>th</sup> JBNSTS Annual Award Ceremony was held at Derozio Hall, Presidency University Kolkata**

#### **Academic/ Lecture Session:**

##### **Speakers and Lectures-**

- **Prof. Sabyasachi Sarkar;** Honorary Visiting Professor, IEST, Shibpur- *"21st Century Drug Delivery: Coal to Nano Carbon to Deliver Drug at Neuron Site in Brain"*
- **Dr. Aditi Sen De;** Associate Professor G, Harish Chandra Research Institute, Allahabad- *"Quantum Technologies"*

#### **Award Session:**

- Invocation by Ms. Debaleena Bhattacharyya
- Welcome address by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS, Kolkata
- Address by Prof. (Dr.) Anuradha Lohia, Vice Chancellor, Presidency University, Kolkata
- Keynote address by Prof. (Dr.) Dhruvajyoti Chattopadhyay, Vice Chancellor, Amity University, Kolkata
- Address by Dr. Aditi Sen De.
- Presidential Address by Prof. (Dr.) Partha Pratim Majumder Distinguished Professor, National Institute of Biomedical Genomics, Kalyani.
- Distribution of certificates of Junior Talent Search Test, Senior Talent Search Test, and Bigyani Kanya Medha Britti by Prof. (Dr.) Anuradha Lohia, Dr. Aditi Sen De, Prof. (Dr.) Partha Pratim Majumder, Prof. (Dr.) Dhruvajyoti Chattopadhyay, Dr. Partha Karmakar, and Prof. (Dr.) Maitree Bhattacharyya.
- Best School Award in Junior Scholarship Category went to Ramakrishna Mission Vidyalaya, Narendrapur. DAV Model School, Durgapur (West Burdwan), Gorabazar Iswar Chandra Institution (Murshidabad) and Bankura Banga Vidyalaya (Bankura) were conferred with the honor of Special Award for district schools. South Point High School and Delhi Public School (Ruby Park), Kolkata were also felicitated.
- Best School Award in Senior Scholarship Category went to Ramakrishna Mission Vidyalaya, Narendrapur and Burdwan Municipal High School (Burdwan), respectively.
- Top 10 Boys and top 10 Girl scholars (in Senior Scholarship Program) were awarded one laptop each.

Dr. Paromita Roy, Deputy Director, JBNSTS delivered the Vote of Thanks, followed with National Anthem which concluded the grand ceremony.



## January 2019

**22/01 – 24/01/2019: “Employee Capacity Building”** organized by Jagadis Bose National Science Talent Search held at Digha Saikatabad, West Midnapore. A meeting was organized regarding the plan of various activities including JTST and STST of JBNSTS for the year 2019. Interactive lecture by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS & Mr. Joydip Das, Asst. Director (Admin), JBNSTS.

**30/01/2019-01/02/2019: JBNSTS-WB (DST) Science “Teachers' Training Program”**, supported by Department of Science & Technology, Government of West Bengal for (66) middle and high school science teachers held at JBNSTS, Kolkata.

Welcome address and Program objective was enumerated by Dr. Paromita Roy (Deputy Director, JBNSTS) and Dr. Abhijit Kar (Scientific Officer, JBNSTS)

Presentations by the Participants from each subjects judged by Prof. Subir Dasgupta (Maulana Azad College, Kolkata) and Dr. Sanatan Chattopadhyay (University of Calcutta).

## February 2019

**04/02/2019-08/02/2019: “WBDS Advanced Science Workshop for District Students”** supported by Department of Higher Education, Government of West Bengal for (45) middle school students of Ranaghat Bharati High School (Nadia), Bidhan Chandra Memorial Govt. Girls High School (Nadia), and Muragacha High School (Nadia) held at JB-Centre of Excellence, Kolkata.

Welcome Address delivered by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS and Dr. Paromita Roy, Deputy Director, JBNSTS.

The participants were trained in Communication Skills and induced to basic computer learning and exercise in JBNSTS Smart Classroom and given exposure to fundamental science experiments at JBNSTS Creative Corner. They were also accompanied to Chintamani Kar Bird Sanctuary, Narendrapur, South 24 Parganas.

**07/02/2019: “Biotechnology Workshop for High School students”** (Hands on Experience for a day) for Kamala Girls' High School, Kolkata, held at JB-Centre of Excellence, Kolkata

Inaugural Lecture by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS

**12/02/2019-15/02/2019: “WBDS Science Orientation Workshop”** supported by Department of Higher Education, Government of West Bengal for (59) middle school students of Eklavya Model Residential School (Jhargram) held at JB-Centre of Excellence, Kolkata.

Welcome Address delivered by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS and Dr. Paromita Roy, Deputy Director, JBNSTS.

The participants were trained in Communication Skills and induced to basic computer learning and exercise in JBNSTS Smart Classroom and given exposure to fundamental science experiments at JBNSTS Creative Corner. They were also accompanied to Chintamani Kar Bird Sanctuary, Narendrapur, South 24 Parganas.

**16/02/2019-19/02/2019: “WBDS Advanced Science Workshop for District Students”** supported by



Department of Higher Education, Government of West Bengal for (50) middle school students of Bansidi High School (Bankura), Laulara High School (Purulia), and Bankura Christian Collegiate School (Bankura) held at JB-Centre of Excellence, Kolkata.

Welcome Address delivered by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS

The participants were trained in Communication Skills and induced to basic computer learning and exercise in JBNSTS Smart Classroom and given exposure to fundamental science experiments at JBNSTS Creative Corner. They were also accompanied to Chintamani Kar Bird Sanctuary, Narendrapur, South 24 Parganas.

**25/02/2019-01/03/2019: "WBDS Advanced Science Workshop for District Students"** supported by Department of Higher Education, Government of West Bengal for (49) middle school students of Fulberia High School (Bankura), Lahdurka High School (Purulia), and Bamnia Vivekananda Vidyapith (Purulia) held at JB-Centre of Excellence, Kolkata.

Inaugural Lecture by Prof. Maitree Bhattacharyya, Director, JBNSTS

The participants were trained in Communication Skills and induced to basic computer learning and exercise in JBNSTS Smart Classroom and given exposure to fundamental science experiments at JBNSTS Creative Corner. Science day (28<sup>th</sup> of February) was celebrated with the participants by Quiz Session marking the occasion. They were also accompanied to Chintamani Kar Bird Sanctuary, Narendrapur, South 24 Parganas.

## March 2019

**02/03/2019-04/03/2019: "Talent Enrichment Program"** titled (Astronomy Camp and Training on Sky Observation) held at Deul Park, West Bardhaman for (58) JBNSTS Senior Scholars

**04/03/2019-08/03/2019: "WBDS Advanced Science Workshop for District Students"** supported by Department of Higher Education, Government of West Bengal for (49) middle school students of Shibdas Central High School (Bankura), Purulia Zilla School (Purulia), and Chittaranjan High School (Purulia) held at JB-Centre of Excellence, Kolkata.

Inaugural Lecture by Prof. Maitree Bhattacharyya, Director, JBNSTS

The participants were trained in Communication Skills and induced to basic computer learning and exercise in JBNSTS Smart Classroom and given exposure to fundamental science experiments at JBNSTS Creative Corner. Furthermore, they were also introduced to the mechanism and operation of Foldscope. They were also accompanied to Chintamani Kar Bird Sanctuary, Narendrapur, South 24 Parganas.

**10/03/2019-14/03/2019: "WBDS Advanced Science Workshop for District Students"** supported by Department of Higher Education, Government of West Bengal for (49) middle school students of Kalyani University Experimental High School (Nadia), Goas High School (Nadia), and Bankati High School (Bankura) held at JB-Centre of Excellence, Kolkata.

Inaugural Lecture by Prof. Maitree Bhattacharyya, Director, JBNSTS

The participants were trained in Communication Skills and induced to basic computer learning and exercise in JBNSTS Smart Classroom and given exposure to fundamental science experiments at



JBNSTS Creative Corner. Furthermore, they were also introduced to the mechanism and operation of Foldscope. They were also accompanied to Chintamani Kar Bird Sanctuary, Narendrapur, South 24 Parganas.

**15/03/2019-19/03/2019: "Science Camp for talented students of +2 Level"** sponsored by Department of Science and Technology & Biotechnology, Government of West Bengal for (176) high school students of West Bengal.

**30/03/2019-31/03/2019: "Those Who Make Us Proud"** sponsored by Department of Science and Technology & Biotechnology, Government of West Bengal for 92 JBNSTS Senior Scholars (2018 batch).

### April 2019

**09/04/2019-11/04/2019: "WBDS Science Orientation Workshop for Bengali Medium Schools, Kolkata"** supported by Department of Higher Education, Government of West Bengal for (66) middle school students of Haltu High School, Garfa DNM High School, Andrews High School, Rammohan Vidyamandir Girls' High School, Belegghata Santi Sangha Vidyatan for Boys' and Bikramgarh High School, Kolkata held at JB-Centre of Excellence, Kolkata.

**09/04/2019: "Biotechnology Workshop for High School students"** (Hands on Experience for a day) for New Alipore Multipurpose School, Kolkata, held at JB-Centre of Excellence, Kolkata

**10/04/2019: "Biotechnology Workshop for High School students"** (Hands on Experience for a day) for Sakhawat Memorial Govt. Girls' High School, Kolkata, held at JB-Centre of Excellence, Kolkata

**17/04/2019-19/04/2019: "WBDS Science Orientation Workshop"** supported by Department of Higher Education, Government of West Bengal, organized by JBNSTS, Kolkata for (60) middle school students of Satmile High School, Ganeswarpur D.H High School, Maisali Trailokya Vidyapith H.S, Basudebpur Haripriya Institution H.S, Dubda Deshapran Birendra Vidyapith and Bhawanichak High School (H.S) held at Satmile High School, Contai, East Midnapore.

### May 2019

**07/05/2019-09/05/2019: "WBDS Science Orientation Workshop"** supported by Department of Higher Education, Government of West Bengal organized by JBNSTS, Kolkata for (61) middle school students of Railway Higher Secondary School, Alipurduar High School, Alipurduar Mc William High School, Jitpur High School, Netaji Vidyapith (H.S) and Alipurduar Newtown Girls' High School held at Railway Higher Secondary School, Alipurduar.

**08/05/2019: "Biotechnology Workshop for High School students"** (Hands on Experience for a day) for Gokhale Memorial Girls' School, Kolkata, held at JB-Centre of Excellence, Kolkata

**09/05 – 31/05/2019: "Cutting Edge Science for Young Talents"** a three-day science orientation workshop supported by Department of Higher Education, Government of West Bengal (84) held at JB-Centre of Excellence, Kolkata.



Meet the parents of the participants: Mrs. Jolly Laha, Expert Psychologist, Kolkata and Mr. Partha Pratim Roy, South Point High School.

## June 2019

**10/06 – 12/06/2019: Cutting Edge Science for Young Talents**” a three-day science orientation workshop supported by Department of Higher Education, Government of West Bengal for (69) participants held at JB-Centre of Excellence, Kolkata.

**16/06 – 21/06/2019: “Nurturing workshop for JBNSTS Junior Scholars of batch 2018”** for (124) scholars held at IISER, Kolkata, organized by Jagadis Bose National Science Talent Search, Kolkata.

**25/06 – 28/06/2019: “Science Workshop for JBNSTS Junior Scholars of batch 2017”** held at JB-Centre of Excellence, Kolkata.

## July 2019

**02/07/2019: “Biotechnology workshop for high school students, hands-on experience”** for Sailendra Sircar Vidyalaya, Kolkata held at JB-Centre for Excellence.

**30/06/19 – 07/07/19: “Talent Enrichment Program”:** 46 JBNSTS Senior Scholars' participated in this program. Scholars visited the following Science & Technology centres in Bangalore.

**08/07/19 – 12/07/19: Science Orientation Workshop for District Students (WBDS)** for 51 students of Chaknan Pallishree Sikhniketan, (East Midnapore), Satmile High School (East Midnapore), Sekendarpur Rai K.P.Pal Bahadur H.S.School, (Hooghly) held at JB-Centre of Excellence, Kolkata.

Participants of the workshop visited 'Innovation Hub' at BITM, Kolkata

**15/07/19 – 19/07/19: Science Orientation Workshop for District Students (WBDS)** for 53 students of Kharagpur Silver Jubilee High School, (Paschim Midnapore), Kharagpur South Side Girls' High School (Paschim Midnapore), Kharagpur A P High School, (Paschim Midnapore), held at JB-Centre of Excellence, Kolkata.

Participants of the workshop visited 'Innovation Hub' at BITM, Kolkata

**22/07/2019 - 26/07/2019: DST – Inspire Science Camp in association with JBNSTS titled 'Learning Science'** for (110) class XI science students of West Bengal, held at JB-Centre of Excellence, Kolkata

**List of Participating Schools:-** (i) Purulia Zilla School, Purulia (ii) Santamaye Girls High School, Purulia (iii) Kolaghat TPP High School (H.S), Midnapore (E) (iv) Barjora High School, Bankura (v) Contai Model Institution, Midnapore (E) (vi) Contai Hindu Girls High School, Midnapore (E) (vii) Purulia Chittaranjan HS, Purulia (viii) Bankura Zilla School, Bankura (ix) Govt. Girls' High School, Purulia (x) Howrah Vivekananda Institution, Howrah (xi) Jadavpur N K Pal Adarsha Shikshaniketan, Kolkata (xii) Shyamnagar Kanti Chandra High School, North 24 Pgs (xiii) Taki House Govt. Sponsored Multipurpose Boys' School, Kolkata (xiv) Shibpur Srimat Swami Pragyananda Saraswati Vidyalaya, Howrah (xv) Bethune Collegiate School, Kolkata (xvi) Dum Dum Kishore Bharati High School, Kolkata (xvii) Barrackpore Girls High School, Kolkata



Welcome Address was delivered by Prof. Maitree Bhattacharyya, Director, JBNSTS, Kolkata

**29/07/19 – 02/08/19: Science Orientation Workshop for District Students (WBDS)** for (47) students of Lalgola Mahesh Narayan Academy, (Murshidabad), Laskarpur High School (H.S) (Murshidabad), Panjipukur Srimati Tulshi Devi Smriti Vidyapith (H.S), Hooghly), held at JB-Centre of Excellence, Kolkata

Welcome Address by Director, JBNSTS, Kolkata

Participants of the workshop visited 'Innovation Hub' at BITM, Kolkata

## August 2019

**05/08/19 – 09/08/19: Science Orientation Workshop for District Students (WBDS)** for (49) students of Behrampore M Kasheshwari High School (Murshidabad), Gorabazar I C Institution (Murshidabad), Jadavpur Vidyapith (Kolkata) held at JB-Centre of Excellence, Kolkata

Welcome Address by Director, JBNSTS, Kolkata

Participants of the workshop visited 'Innovation Hub' at BITM, Kolkata

**25/08/2019: 60<sup>th</sup> Senior Talent Search Test:** 1748 undergraduate science students applied for STST examination and 1108 students appeared for the test from all over West Bengal in the following 34 centres.

(1) A B N Seal College, Coochbehar, (2) A P C Roy Government College, Siliguri, (3) Alipurduar College, Alipurduar, (4) Arambagh Girls' College, Hooghly, (5) Bankura Sammilani College, Bankura, (6) Balurghat College, Balurghat, Dakshin Dinajpur, (7) Barasat Girls' High School, North 24 Parganas, (8) Barrackpore Rastraguru Surendranath College, North 24Parganas, (9) Basirhat College, Basirhat, North 24Parganas (10) Burdwan Raj College, Burdwan, (11) Chakdaha College, Nadia (12) Dum Dum Motijheel College, North 24Parganas, (13) Ekalavya Model Residential School, Jhargram, (14) Fakir Chand College, Diamond Harbour, South 24Parganas (15) Hooghly Mohsin College, Hooghly, (16) Indian Institute of Technology, Kharagpur, (17) J K College, Purulia, (18) Jadavpur University, Kolkata, (19) Krishnath College, Behrampur, (20) Krishnanagar Collegiate School, Nadia, (21) Malda College, Malda, (22) Midnapore College, Paschim Midnapore, (23) Tamralipta Maha Vidyalaya, Midnapore, (24) National Institute of Technology, Durgapur, (25) Narasinha Dutta College, Howrah, (26) Prabhat Kumar College, Contai, Purba Midnapore, (27) P.D Women's College, Jalpaiguri (28) Presidency University, Kolkata, (29) RKM Residential College, Narendrapur, South 24Parganas, (30) RKM Vidyamandira, Belur Math, Howrah, (31) Raiganj Surendranath Mahavidyalaya, Raiganj, Uttar Dinajpur, (32) Sundarban Janokalyan Sangha High School, Sagar, South 24 Parganas, (33) Sundarban Mahavidyalaya, Kakdwip, South 24 Parganas, (34) Visva Bharati, Shantiniketan, Birbhum.

**25/08/2019: 5<sup>th</sup> Junior Talent Search Test:** 8836 number of science students (Class XI) applied for JTST examination and 7728 students appeared for the test from all over West Bengal in the following 34 centres.

(1) A B N Seal College, Coochbehar, (2) A P C Roy Government College, Siliguri, (3) Alipurduar College, Alipurduar, (4) Arambagh Girls' College, Hooghly, (5) Bankura Sammilani College, Bankura, (6) Balurghat College, Balurghat, Dakshin Dinajpur, (7) Barasat Girls' High School, North 24 Parganas,

(8) Barrackpore Rastraguru Surendranath College, North 24Parganas, (9) Basirhat College, Basirhat, North 24Parganas (10) Burdwan Raj College, Burdwan, (11) Chakdaha College, Nadia (12) Dum Dum Motijheel College, Norath 24Parganas, (13) Ekalavya Model Residential School, Jhargram, (14) Fakir Chand College, Diamond Harbour, South 24Parganas (15) Hooghly Mohasin College, Hooghly, (16) Indian Institute of Technology, Kharagpur, (17) J K College, Purulia, (18) Jadavpur University, Kolkata, (19) Krishnath College, Behrampur, (20) Krishnanagar Collegiate School, Nadia, (21) Malda College, Malda, (22) Midnapore College, Paschim Midnapore, (23) Tamralipta Maha Vidyalaya, Midnapoure, (24) National Institute of Technology, Durgapur, (25) Narasinha Dutta College, Howrah, (26) Prabhat Kumar College, Contai, Purba Midnapore, (27) P.D Women's College, Jalpaiguri (28) Presidency University, Kolkata, (29) RKM Residential College, Narendrapur, South 24Parganas, (30) RKM Vidyamandira, Belur Math, Howrah, (31) Raiganj Surendranath Mahavidyalaya, Raiganj, Uttar Dinajpur, (32) Sundarban Janokalyan Sangha High School, Sagar, South 24 Parganas, (33) Sundarban Mahavidyalaya, Kakdwip, South 24 Parganas, (34) Visva Bharati, Shantiniketan, Birbhum

## September 2019

**02/09/19 – 06/09/19: Science Orientation Workshop for District Students (WBDS)** for (47) students of Lalgola SM Girls' High School, (Murshidabad), Hooghly Branch Government High School (Hooghly), Serampore Union Institution, (Hooghly), Mahesh Sri R K Ashram Vivekananda Vidyalaya, (Hooghly) held at JB-Centre of Excellence, Kolkata

Welcome address and lecture by Prof. (Dr.) Maitree Bhattacharyya, Director, JBNSTS, Kolkata

Participants of the workshop visited 'Innovation Hub' at BITM, Kolkata

**21/09-22/09/2019: Senior Talent Search Test Interview (2nd Phase):** For short listed 333 undergraduate science students of West Bengal for JBNSTS Senior Scholarship held at JB - Centre of Excellence, Kolkata.

**24/09- 25/09/2019: "Biotechnology workshop for High School Students, Hands-on Experience"** for Panjipukur Srimati Tulshi Devi Smriti Vidyapith (H.S.), Hooghly held at JB-Centre for Excellence.

- Inaugural lecture by Prof. Maitree Bhattacharyya, Director, JBNSTS
- Laboratory session by Dr. Arnab Pramanik, Dr. Pijush Basak, Dr. Rituparna De, Sri Sudip Nag of JBNSTS

## November 2019

**1/11 – 3/11/2019: Senior Talent Search Test Scientific Creativity Test (3<sup>rd</sup> and final Phase):** For short listed (131) undergraduate science students of West Bengal for JBNSTS Senior Scholarship held at JB - Centre of Excellence, Kolkata

**17/11-19/11/2019: State Youth Science Fair** organized by Department of Youth Affairs in collaboration with JBNSTS, Kolkata.

- Inauguration by Dr. Partha Chatterjee, Minister for Education Government of West Bengal, Sri Aroop Biswas, Minister of Public Works and Youth Affairs & Sports and Prof.(Dr.) Maitree Bhattacharyya, Director JBNSTS
- Meet the Scientist (17/11/2019): Mr. Abir Atarathi, computer professional spoke about Cyber Threats



- Meet the Scientist (18/11/2019): Dr. Biman Bihari Mandal, IIT Guwahati spoke about *Lab Grown Organ and Tissue*
- Valedictory and prize distribution ceremony in the presence of Shri Aroop Biswas, Hon'ble Minister in Charge, Department of Public Works and Youth Affairs & Sports and Sports, Prof. Dhrubajyoti Chattopadhyay, Vice Chancellor, Amity University, Kolkata.

**22/11 – 24/11/2019: Junior Talent Search Test final Interview (2nd and final Phase):** For short listed (481) students of West Bengal to be held at JB - Centre of Excellence, Kolkata.

## Research Activities In JBNSTS

### Dr. Smarajit Manna

1. High dielectric response of cobalt aluminate mullite (CAM) nanocomposite over cobalt aluminate mullite polymer (CAMP) nanocomposite in PVDF matrix. Biplab Kumar Paul, Debasis Roy, Smarajit Manna, Papiya Nandy, Sukhen Das, April 2018, Journal of Electroceramics 40(22), DOI: 10.1007/s10832-018-0136-z.
2. A novel approach to Peptide Vaccine Design for Ebola virus. Subhamoy Biswas, Tathagata Dey, Shreyans Chatterjee, Smarajit Manna, Ashesh Nandy, Sukhen Das, Papiya Nandy, Subhash C Basak. MOL2NET, International Conference Series on Multidisciplinary Sciences, 5th edition, MOL2NET, 2019, 5, ISSN: 2624-5078, doi: 10.13140/RG.2.2.36055.2192
3. Computational Methodology for Peptide Vaccine Design for Zika virus: A Bioinformatics approach. Ashesh Nandy, Smarajit Manna, and Subhas C Basak. A Chapter in Immunoinformatics – Methods and Protocols, Third Edition to be published in the lab protocol series Methods in Molecular Biology, published by Springer Nature. Book Chapter (communicated in 2019)

### Dr. Paromita Roy

1. Needles in a Hay Stack – Voices of Women in Science. Roy P. Paper presentation at the 1st Thematic ECHA Conference, held in Dubrovnik, Croatia, October 16 – 18, 2019, Page 42 of e-Conference Book of Abstracts, <https://echathematic2019.info/publications/book-of-abstracts/>
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## Prof. Maitree Bhattacharya and Biotechnology Research Group

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## CURRENT DONORS AND DONATIONS (2018-19)

### A. SCHOLARS RESERVE FUND

#### i) Donations (General)

1 Armenian Holy Church of Nazareth	2,35,500.00	
2 MP Birla Smarak Kosh (South Point)	40,500.00	
3 Daulat Ram Mehndiratta Charitable Trust	27,000.00	<b>3,03,000.00</b>

IF you Salute your work, You do not have to salute anybody. IF you pollute your work, You have to salute everybody.

**Abdul Kalam**





# THE JBNSTS FUNDS AND ACCOUNTS

**Investment in Science  
education & research :  
JBNSTS an Asset to  
the Society**

## Financial Report

JBNSTS is happy to report that the year 2017-18 was a period of high growth for JBNSTS. During this year, a number of new academic initiatives have been launched for a wide array of students and also the science teachers of district and rural schools. Also, during this period, a higher amount of grant has been received in commensuration with increase in the activities. The major part of the grant came from the Department of Higher Education, Science & Technology and Biotechnology Department, Government of West Bengal. Apart from that, we received grant from Department of Science & Technology, Government of India for projects like “Teachers' Training Program”, “Science Camp” and research projects. This inflow of funds from multiple sources shows its high physical accountability of the expenditure on our part.

Apart from regular sanction of grant for maintenance, the Department of Higher Education, Science & Technology and Biotechnology Department, Government of West Bengal, in the year 2017-18, funded significant amounts infrastructural facilities like Smart class room, rooftop class rooms with dining hall, Creativity Corner etc. The grant from Department of Higher Education, Science & Technology and Biotechnology Department, Government of West Bengal for regular maintenance was also increased to meet enhanced Office & Program expenses.

The funding in West Bengal District Scheme helps to conduct programs in remote village schools.

The Department of Higher Education, (formerly The Department of Higher Education Science & Technology and Biotechnology Department) Government of West Bengal sanctioned funds for Junior Talent Search Test, Senior Talent Search Test and Bigyani Kanya Medha Britti which have great impact. 200 Scholarships for Junior Scholars have been fixed at Rs.1,000/- per month with a book grant of Rs.2,500/- per year. 50 scholarships for Senior Scholars of Rs.4,000/- per month with a book grant of Rs.5,000/- per year and 50 scholarships for Bigyani Kanya of Rs.2,000/- per month with a book grant of Rs.2,000/- per year.

The Department of Science and Technology, Government of India (DST-SEAT) also sanctioned their recurring grants for Science camp and other programs as stated above.

At a glance the amounts received from both government and non government sources are as follows:

A. Department of Higher education, Science & Technology and Biotechnology, Government of West Bengal

•	• For Maintenance	Rs. 1,69,48,632/-
•	• West Bengal District Scheme	Rs. 26,00,000/-
•	• Junior Scholarship	Rs. 1,10,14,500/-
•	• Senior Scholarship	Rs. 55,30,000/-
	• Bigyani Kannya Medha Britti	Rs. 21,50,000/-
	• Talent Enrichment Programme	Rs. 14,00,000/-

B. Department of Science & Technology, Government of India

•	• Science Camp	Rs. 8,71,000/-
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The audited accounts of the institution are reported in the following pages.



**M. Saha & co.**  
Chartered Accountants

**“KALYANI APARTMENT”**  
113/6 Hazra Road, 1st Floor  
Kolkata-700 026, Ph. - 2455-1236  
Email : msaha-co@yahoo.com

## INDEPENDENT AUDITOR'S REPORT

**To the Management of Jagadis Bose National Science Talent Search**

### Opinion

We have audited the financial statements of Jagadis Bose National Science Talent Search (the society) which comprise the Balance Sheet as at 31st March, 2019, Income and Expenditure Statement and the Receipts & Payments Account for the year then ended on that date, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion and to the best of our information and according to the explanations given to us, the accompanying financial statements give a true and fair view of the financial position of the society as at 31st March, 2019, of its financial performance and its cash flows for the year then ended in accordance with the accounting principles generally accepted in India.

### Basis for Opinion

We conducted our audit in accordance with the Standards on Auditing (SAs) issued by ICAI. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the society in accordance with the ethical requirements that are relevant to our audit of the financial statements in India, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Emphasis of Matter

We draw attention to Note C “Changes in Accounting Policies” in Annexure P “Significant Accounting Policies and Notes to the Financial Statements for the year ended 31<sup>st</sup> March, 2019”, forming part of the financial statements, which describes the effects of change in Accounting Policy. The said changes in the presentation of the financial statements have been done to make the same in line with the provisions of Income-Tax Act, 1961 and Accounting Standards notified by the Institute of Chartered Accountants of India. The management of the society has given us assurance that the said changes shall be reported and ratified in the ensuing Governing Body Meeting.

Our opinion is not modified in respect of this matter.



### **Responsibilities of Management and Those Charged with Governance for the Financial Statements**

Management is responsible for the preparation of these financial statements that give a true and fair view of the state of affairs, results of operations and cash flows of the entity in accordance with the accounting principles generally accepted in India. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the entity's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the entity or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the entity's financial reporting process.

### **Auditor's Responsibilities for the Audit of the Financial Statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with generally accepted accounting principles in India will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of the auditor's responsibilities for the audit of the financial statements is located at ICAI website at: <https://www.icai.org>. This description forms part of our auditor's report.

**Date : 12<sup>th</sup> September, 2019**  
**Place: Kolkata**

For and on behalf of,  
**M. Saha & Co.**  
**Chartered Accountants**  
**Firm Registration No.: 305135E**

**(CA. Debarshi Saha)**  
**Partner, Membership No.: 061398**  
**UDIN: 19061398AAAABX4550**



## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### BALANCE SHEET AS ON 31ST MARCH, 2019

PREVIOUS YEAR	DESCRIPTION	SCHEDULES	CURRENT YEAR	
₹			₹	₹
<b>SOURCES OF FUNDS</b>				
	- Land & Building Fund	A	47,293,234.42	
	- Movable Properties Fund	B	22,547,326.20	
113,962,494.70	Other Funds	C	47,750,053.57	
17,201,959.39	Unutilised Grants	D	17,688,812.37	
13,548,681.50	Current Liabilities	E	9,418,392.00	
244,413.00	Other Deposits	F	418,652.00	
<b>144,957,548.59</b>		<b>TOTAL</b>	<b>145,116,470.56</b>	
<b>APPLICATION OF FUNDS</b>				
26,757,808.42	Land & Building	G	47,293,234.42	
16,328,774.67	Movable Properties	G	22,547,326.20	
	- Land & Building Fund Investments	H	-	
	- Movable Properties Fund Investments	I	-	
94,210,093.92	Other Investments	J	61,040,129.94	
1,734,727.67	Loans & Advances	K	1,514,870.41	
5,926,143.91	Cash & Bank Balances	L	12,720,909.59	
<b>144,957,548.59</b>		<b>TOTAL</b>	<b>145,116,470.56</b>	

On behalf of the  
Governing Body

In terms of our report of even date  
attached herewith  
For **M. Saha & Co.**  
Chartered Accountants  
FRN: 305135E

**Prof (Dr.) Maitree Bhattacharyya**  
Director

**CA. Debarshi Saha**  
Partner  
Membership No.: 061398

Kolkata  
Date: 12th September, 2019

**JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH**  
1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

**INCOME AND EXPENDITURE FUNDS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2019**

Previous Year	Particulars	Project / Program Activities	Scholars' Reserve Fund	Development Fund	Laboratory Fund	JBNSTS - Own Generation Fund	Staff Welfare & Medical Fund	Infrastructure Development Fund	Total
₹		₹	₹	₹	₹	₹	₹	₹	₹
	<b>INCOME</b>								
	<b>General :</b>								
1,644,416.75	Grant-in-aid	54,077,393.26	-	-	-	-	-	-	54,077,393.26
358,500.00	Donations	-	303,000.00	-	-	-	-	-	303,000.00
2,329,741.50	Interest on Investments	-	1,010,014.38	679,776.00	109,930.39	445,998.08	-	-	2,245,718.86
4,118,370.18	Interest earned on Savings / Short-term Deposits	-	62,080.00	763,469.73	21,472.05	1,706,059.52	64,095.13	67,462.60	2,684,639.03
	Registration Fees (For Senior/Junior Talent)	-	-	-	-	1,698,485.00	-	-	1,698,485.00
1,176,620.00	Search Tests	-	-	-	-	1,091.00	-	-	1,091.00
3,770.00	Miscellaneous Other Receipts	-	-	-	-	-	-	-	-
2,500.00	Rent Earned	-	-	-	-	-	-	-	-
20,685.25	Accommodation	-	-	-	-	114,831.00	-	-	114,831.00
	Liabilities Written Back	-	787,631.50	-	-	-	-	-	787,631.50
100,000.00	Overhead	-	-	-	-	-	-	-	-
<b>9,754,603.68</b>	<b>Total Income</b>	<b>54,077,393.26</b>	<b>2,162,725.88</b>	<b>1,443,245.73</b>	<b>131,402.45</b>	<b>3,966,464.60</b>	<b>64,095.13</b>	<b>67,462.60</b>	<b>61,912,698.26</b>
	<b>EXPENDITURES</b>								
	<b>General :</b>								
3,506,603.58	Expenses	54,077,393.26	1,364,000.00	-	42,305.00	-	-	-	55,483,698.26
<b>1,465,415.75</b>	<b>Programme Expenses</b>								
<b>4,972,019.33</b>	<b>Total Expenditure</b>	<b>54,077,393.26</b>	<b>1,364,000.00</b>	<b>-</b>	<b>42,305.00</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>55,483,698.26</b>
4,782,584.35	Surplus for the Year	-	798,725.88	1,443,245.73	89,097.45	3,966,464.60	64,095.13	67,462.60	6,429,091.39
	Less: Capital Expenses met out of Revenue Income								
	Land & Building Fund								
	Movable Properties Fund								
4,782,584.35	Net Surplus for the Year	-	798,725.88	1,443,245.73	89,097.45	3,966,464.60	64,095.13	67,462.60	6,429,091.39

In terms of our report of even date attached herewith

For **M. Saha & Co.**  
Chartered Accountants  
FRN: 305135E

Sd/-  
**CA. Debarshi Saha**  
Proprietor  
Membership No.: 061398

On behalf of the Governing Body  
Sd/-  
**Prof. ( Dr. ) Maitree Bhattacharyya**  
Director

KOLKATA  
The 12th September, 2019



## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### RECEIPTS & PAYMENTS ACCOUNT FOR THE YEAR ENDED 31.03.2019

RECEIPTS		RS	PAYMENTS		RS
<b>JBNSTS Own Fund :</b>		-	<b>Establishment Expenses :</b>		
Registration fee's received		1,698,485.00	Salaries & Wages		9,608,080.00
Income from Investments		2,152,057.60	Office and Administrative Expenses		7,843,794.60
Miscellaneous and other receipts		115,922.00	<b>Project Programme Activities</b>		-
<b>Development Fund :</b>		-	Expenses funded by Govt.		36,625,518.66
Income from Investments		1,443,245.73	<b>Scholars Reserve Fund</b>		-
<b>Scholars Reserve Fund</b>		-	Expenses		1,364,000.00
Donation		303,000.00	<b>Laboratory Fund</b>		-
Income from Investments		1,072,094.38	Expenses		42,305.00
Liabilities written Back		787,631.50	<b>Loss on Sale of/ Written Off :</b>		-
<b>Laboratory Fund :</b>		-	Investment		-
Income from Investments		131,402.45	Fixed Assets		-
<b>Staff Welfare Fund :</b>		-	Movable Properties		-
Income from Investments		64,095.13	<b>Fixed Assets Additions</b>		
Investments withdrawn		-	Land & Building (Purchase/Gift)		159,812.00
<b>Infrastructure Development Fund</b>		-	Building (Construction Work in progress)		21,527,015.00
Income from Investments		67,462.60	Boundary Wall		-
<b>Project Programme Activities</b>		-	Electrical Installation & Equipment		120,000.00
Grant-in Aid from Govt.		54,077,393.26	Tubewell/Water System		-
<b>Land &amp; Building Fund :</b>		-	Furniture, Equipment		1,543,101.68
Donations/Gifts		-	Computers		35,477.00
Government/Public Bodies Grants		-	Electrical Equipment & Generator		-
Income from Investments		-	Medical Equipment, Instruments		-
Investments withdrawn		-	Laboratory Equipments		9,204,701.00
<b>Movable Properties Fund :</b>		-	Bicycles/Cycle-rikshaws		-
Donations/Gifts		-	Motor Cars, Jeeps, etc.		-
Government/Public Bodies Grants		-	Buses, Lorries, Tractors, etc.		-
Income from Investments		-	Library Books		-
Investments withdrawn		-	Endow / Permanent Fund Investments		-
<b>Other Investments withdrawn</b>		94,210,093.92	Land & Building Fund Investments		-
Closing Unspent Grant		17,688,812.37	Movable Prop. Fund Investments		-
Opening Grant Receivable		1,471,297.12	Development Fund Investments		16,261,636.73
Closing Sundry Deposits :		-	Scholar Reserve Fund Investments		14,566,281.39
Caution Money		-	Other Investments		30,212,211.82
Students' Deposits		-	Opening Unspent Grant		14,166,802.14
Security Deposits		418,652.00	Closing Grant Receivable		368,492.36
<b>Loans &amp; Advances :</b>			<b>Opening Sundry Deposits :</b>		-
Others		152,936.45	Caution Money		-
-		-	Private Deposits		-
Closing Current liabilities		9,418,392.00	Security Deposit		244,413.00
			Grant and Transfer (Contra)		-
			<b>Loans &amp; Advances :</b>		-
			Electricity Deposit		922,450.00
			Others		113,433.95
			Sundry Amount Receivable		-
			Opening Current Liabilities		13,548,681.50
<b>TOTAL</b>		185,272,973.51	<b>TOTAL</b>		178,478,207.83
<b>Opening Balance</b>		5,926,143.91	<b>Closing Balance</b>		12,720,909.59
<b>GRAND TOTAL</b>		191,199,117.42	<b>GRAND TOTAL</b>		191,199,117.42
Cash in Hand		89,465.00			
Cheques in Hand					
In P.O.					
SavingsA/c					
At Banks in SB & CD A/c		12,631,445.59			
With Headquarters					
<b>Total (Rs)</b>		<b>12,720,910.59</b>			







## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - B : Movable Properties Fund as at 31.03.2019

PARTICULARS	Movable Properties Fund Rs.		
Credit Balance as at 01.04.2018			
<b>ADD</b>			
Capital Grants			
Capital Donations			
(i.e. Corpus Donations) - Cash			
" - Kind			
" - Foreign Contribution			
Transfer From I/E A/c (II) for acquiring Capital Assets			
Income from Investments			
Excess Depreciation in last year now reversed	3,669.85		
<u>Transfer from different funds</u>			
<u>Out of Opening Balance</u>			
Development Fund	15,070,196.44		
Laboratory Fund	539,500.36		
JBNSTS Own Generation Fund	705,113.94		
Transfer from Unspent Grant	899,168.25		
Special Reserve Fund	13,963.93		
<u>Out of Current year</u>			
Development Fund	10,004,111.43		
Net Surplus as per I/E A/c (II)			
<b>A</b>	<b>TOTAL</b>	<b>Rs.</b>	<b><u><u>27,235,724.20</u></u></b>
<b>Less</b>			
Depreciation on Assets (Contra)			4,688,398.00
<u>Transfer to different funds</u>			
Net Deficit as per I/E A/c (II)			
<b>B</b>	<b>Total Deduction</b>	<b>Rs.</b>	<b><u><u>4,688,398.00</u></u></b>
Balance as at 31.03.2019 as per Balance Sheet (A-B) Rs.			22,547,326.20



**JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH**  
1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

**SCHEDULE - C : OTHER FUNDS AS AT 31.03.2019**

PARTICULARS	Scholars Reserve Fund	Development Fund	Laboratory Funds	Special Reserve Fund	Contingency Fund	JBNSTS Own Generation Funds	Staff Welfare & Medical Funds	Infrastructure Development Funds	Retirement Benefit Fund
	₹	₹	₹	₹	₹	₹	₹	₹	₹
Credit Balance as at 01.04.2018	15,653,872.21	87,863,263.49	2,240,644.12	13,963.93	1,000,000.00	5,403,232.48	866,384.26	911,902.99	9,231.22
<b>ADD</b>									
Capital Grants									
Capital Donations									
(i.e. Corpus Donations) - Cash									
" - Kind									
" - Foreign Contribution									
Transfer From I/E A/c (II) for acquiring Capital Assets									
Transfer from different funds									
JBNSTS Own Generation Fund							100,000.00	100,000.00	
Net Surplus as per I/E A/c (II)	798,725.88	1,443,245.73	89,097.45			3,966,464.60	64,095.13	67,462.60	
<b>A TOTAL Rs.</b>	<b>16,452,598.09</b>	<b>89,306,509.22</b>	<b>2,329,741.57</b>	<b>13,963.93</b>	<b>1,000,000.00</b>	<b>9,369,697.08</b>	<b>1,030,479.39</b>	<b>1,079,365.59</b>	<b>9,231.22</b>
<b>Less</b>									
Transfer to different funds									
Out of Opening Balance									
Land & Building Fund		24,621,819.42							
Movable Properties Fund		15,070,196.44	539,500.36	13,963.93		705,113.94			
Out of Current Year									
Land & Building Fund		21,686,827.00							
Movable Properties Fund		10,004,111.43							
Staff Welfare & Medical Fund						100,000.00			
Infrastructure Development Fund						100,000.00			
Net Deficit as per I/E A/c (II)									
<b>B Total Deduction Rs.</b>	<b>-</b>	<b>71,382,954.29</b>	<b>539,500.36</b>	<b>13,963.93</b>	<b>-</b>	<b>905,113.94</b>	<b>-</b>	<b>-</b>	<b>-</b>
Balance as at 31.03.2019 as per Balance Sheet (A-B) Rs.	<b>16,452,598.09</b>	<b>17,923,554.93</b>	<b>1,790,241.21</b>	<b>-</b>	<b>1,000,000.00</b>	<b>8,464,583.14</b>	<b>1,030,479.39</b>	<b>1,079,365.59</b>	<b>9,231.22</b>



# JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

## 1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - D : UNUTILISED GRANT FOR THE YEAR ENDED 31ST MARCH, 2019

Particulars	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹	₹	
	Opening Unutilised Grant	Opening Grant Receivable	Grant-in-aid	Liabilities no longer required written back	Interest earned from Saving Bank Deposits	Total Income	Establishment Schedule M	Programme Expenses as per schedule N	Office Expenses as per schedule O	Transfer to different funds	Total Expenses	Closing Grant Receivable	Closing Unutilised Grants
<b>Government of West Bengal</b>	5,107,805.94	896,155.00	18,418,629.00		24,422,589.94	24,422,589.94	9,608,080.00	643,914.00	7,843,794.60	2,135,989.00	20,231,777.60		4,190,812.34
Dept of Higher Edn. (DHE)- Maint. Grant West Bengal Distr. Scheme (WBDS)	-	251,055.51	4,000,000.00		3,748,944.49	3,748,944.49		2,991,141.41			2,991,141.41		757,803.08
Junior Talent Search Test (DHE - JTST)	2,471,458.00				2,471,458.00	2,471,458.00							2,471,458.00
Senior Talent Search Test (DST - STST)	5,056,900.50		12,439,500.00		17,496,400.50	17,496,400.50		11,677,574.00			11,677,574.00		5,818,826.50
Talent Enrichment Programme (DST - TEP)	36,855.00		9,006,400.00		9,043,255.00	9,043,255.00		8,756,270.00			8,756,270.00		286,985.00
Teachers' Training Programme (DST - TTP)	579.00		3,080,000.00		3,080,579.00	3,080,579.00		1,544,285.00			1,544,285.00		1,536,294.00
Bigyani Kanya Medha Britti (DST)	871,395.10				871,395.10	871,395.10		395,779.00			395,779.00		475,616.10
WB Academy of Science & Technology (WAST)	519,987.00		3,150,000.00		3,669,987.00	3,669,987.00		3,394,599.00			3,394,599.00		275,388.00
State Science Fair 2018	30,000.00		55,500.00		30,000.00	30,000.00		28,067.00			28,067.00		30,000.00
Biotechnology Laboratory (Dept. of Biotechnology)			2,380,000.00		2,380,000.00	2,380,000.00					1,771,206.00		608,794.00
DST - (WAST)	2,831.75				2,831.75	2,831.75							2,831.75
Dr. Abhijit Kar	679,848.76				679,848.76	679,848.76				679,848.76	679,848.76		-
Dr. Pijush Basak	184,619.49				184,619.49	184,619.49				184,619.49	184,619.49		-
Other Old Project	34,700.00				34,700.00	34,700.00				34,700.00	34,700.00		-
<b>Other Organisations</b>	1,658.00				1,658.00	1,658.00							1,658.00
Maulana Abul Kalam Azad Instt. Of Asian Studies (MAKAIAS) Dr. Paromita Roy													
RSSDI-Diabetis (Prof. Maitree Bhattacharyya)			100,000.00		100,000.00	100,000.00		55,569.00			55,569.00		44,431.00
Indian Council of Medical Research (ICMR) Fellowship Grant Mr R. Pattanayak	8,330.00		409,995.00		418,325.00	418,325.00		407,274.00			407,274.00		11,051.00
Ministry of North East Region (MIDoNER) Department of Science & Technology (DST-SEATS)	108,311.75				108,311.75	108,311.75							108,311.75
Department of Science & Technology (DST)		129,127.00	871,000.00		741,873.00	741,873.00		910,000.00			910,000.00	168,127.00	-
Department of Science & Technology (DST-TTP)	47,293.05				47,293.05	47,293.05							47,293.05
Talent Enrichment Programme (CSR)	1,089,003.80				1,099,798.80	1,099,798.80		105,973.00			105,973.00	9,850.89	993,825.80
Vigyan Prasar (VP)		9,850.89			(9,850.89)	(9,850.89)						9,850.89	-
Science & Engineering Research Bureau (SERB) u/ DST Dr. Abhijit Kar		5,322.00			(5,322.00)	(5,322.00)						5,322.00	-
KVPY interview 2018		179,786.72			179,786.72	179,786.72						179,786.72	-
Science & Engineering Research Bureau (SERB) u/ DST Dr. Pijush Basak	54,227.25		650,000.00		5,997.00	710,224.25		717,725.00			717,725.00	7,500.75	-
<b>Total</b>	<b>16,305,804.39</b>	<b>1,471,297.12</b>	<b>54,752,009.00</b>	<b>-</b>	<b>71,397,713.27</b>	<b>71,397,713.27</b>	<b>9,608,080.00</b>	<b>31,819,155.41</b>	<b>7,843,794.60</b>	<b>3,035,157.25</b>	<b>54,077,393.26</b>	<b>368,492.36</b>	<b>17,688,812.37</b>

## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - "E" : CURRENT ASSETS, LOANS & ADVANCES

PREVIOUS YEAR	CURRENT YEAR
₹	₹
<b>Liabilities for :</b>	
3,136,853.00 Scholarship	2,895,582.00
468,315.50 Book Grant	365,003.00
76,492.00 Bigyani Kannya Medha Brtti	598,000.00
31,171.00 Talent Enrichment Programme	197,558.00
31,200.00 Teacher training Programme (DST, GOWB)	-
2,000.00 Junior Talent Search Test (DST, GOWB)	24,000.00
15,000.00 Best School Award	15,000.00
- Development Fund Expenses	404,632.00
20,823.00 Repair & Maintenance (General)	44,151.00
- Contingency	33,403.00
1,295.00 Postage & Telephone	19,241.00
- WBDS Programme Expenses	240,201.00
52,710.00 City Conveyance	59,947.00
- Repair & Maintenance (Building)	255,586.00
79,620.00 Security Expenses	204,105.00
- Cleaning Expenses	43,786.00
40,260.00 Electricity	-
- Books & Journals	173,716.00
32,400.00 Legal Professional Fee	-
32,400.00 Audit Fee	64,900.00
2,900,000.00 Advance Grant from DST, GOWB for Scholarship & Sc. W/s under JTST for 2017-18	2,900,000.00
- Lab Equipment ( Lab. Fund)	39,475.00
353,750.00 Interior Decorator & Renovation(Development fund)	353,750.00
6,000.00 TDS (Consultancy)	1,000.00
59,698.00 TDS (Contractors)	37,854.00
- TDS (Staff)	66,400.00
- TDS (GST)	10,225.00
4,360.00 Profession Tax	3,750.00
48,000.00 Other deposits	-
29,250.00 DST(TTP) Govt. of India Expenses	-
385,385.00 DST (SEATS) Expenses	9,600.00
500,939.00 Creativity Corner (Dev Fund)	-
4,883,233.00 Smart class room (Dev Fund)	-
357,527.00 Refundable to DST (SEATS), Govt. of India	357,527.00
<b>13,548,681.50 Total</b>	<b>9,418,392.00</b>



**JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH**  
1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

**SCHEDULE - "F" : OTHER DEPOSITS**

<b>PREVIOUS YEAR</b>		<b>CURRENT YEAR</b>
₹		₹
	<b>Deposits for :</b>	
109,781.00	Security Deposit by Electrical Contractor	54,781.00
134,632.00	Security Deposit by Civil Contractor	363,871.00
<b>244,413.00</b>		<b>418,652.00</b>

## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - "G" : FIXED ASSETS AS AT 31.03.2019

Description of Assets	Written down values at 01.04.2018 Rs.	Addition During the Year From Capital Receipts* Rs.	Discarded, Transferred, Sold during the year (Rs.)#	Amount on which depreciation is charged (Rs.)	Rate of Depreciation	Depreciation for the year Rs.	Written down values at 31.03.2019 Rs.	Original Cost as at 31.03.2019 Rs.	Accumulated Depreciation as at 31.03.2019 Rs.
<b>I. Land &amp; Buildings</b>									
1. Leasehold Land	2,075,669.00		-	2,075,669.00		-	2,075,669.00	-	-
2. Buildings	22,132,533.11	135,614.00	-	22,268,147.11	5%	1,113,407.00	21,154,740.11	135,614.00	1,113,407.00
3. Rain Water Harvesting System	50,963.65		-	50,963.65	5%	2,548.00	48,405.65	-	2,548.00
4. Mural	32,107.26		-	32,107.26	5%	1,605.00	30,502.26	-	1,605.00
5. Biotechnology Laboratory	201,409.40	24,198.00	-	225,607.40	15%	33,841.00	191,766.40	-	33,841.00
<b>TOTAL Rs.</b>	<b>24,492,672.42</b>	<b>159,812.00</b>	<b>-</b>	<b>24,652,484.42</b>		<b>1,151,401.00</b>	<b>23,501,083.42</b>	<b>135,614.00</b>	<b>1,151,401.00</b>
<b>II. Construction Work-in-Progress Rs.</b>									
1. Building (Innovation Centre)	2,265,136.00	21,527,015.00	-	23,792,151.00		-	23,792,151.00	-	-
<b>TOTAL Rs.</b>	<b>2,265,136.00</b>	<b>21,527,015.00</b>	<b>-</b>	<b>23,792,151.00</b>		<b>-</b>	<b>23,792,151.00</b>	<b>-</b>	<b>-</b>
<b>III. Movable Properties</b>									
<b>Furniture, Equipment, Plant etc.</b>									
1. Electrical Equipment	6,755,366.12	120,000.00	62,387.38 (66,057.23)	6,812,978.74	15%	1,021,947.00	5,791,031.74	57,612.62	1,021,947.00
2. Electrical Fittings	85,467.28			151,524.51	10%	15,152.00	136,372.51	66,057.23	15,152.00
3. Electrical Fittings funded by GoWB	140,555.25			140,555.25	10%	14,056.00	126,499.25	-	14,056.00
4. Furniture	1,787,717.10	1,543,101.68	-	3,330,818.78	10%	333,082.00	2,997,736.78	1,543,101.68	333,082.00
5. Office Equipment	263,737.24			263,737.24	15%	39,561.00	224,176.24	-	39,561.00
6. Science Indoor Exhibits	71,213.26			71,213.26	15%	10,682.00	60,531.26	-	10,682.00
7. Computer	3,042,374.42	35,477.00		3,077,851.42	40%	1,231,141.00	1,846,710.42	35,477.00	1,231,141.00
8. Laboratory Equipment	3,436,208.03	9,204,701.00		12,640,909.03	15%	1,896,136.00	10,744,773.03	9,204,701.00	1,896,136.00
9. Computer & Accessories funded by GOWB	142,764.24			142,764.24	40%	57,106.00	85,658.24	-	57,106.00
10. Printer/Scanner/Photocopier funded by GOWB	51,681.10			51,681.10	40%	20,672.00	31,009.10	-	20,672.00
11. Air Condition (Dormitory)	488,633.28			488,633.28	10%	48,863.00	439,770.28	-	48,863.00
<b>Assets out of SRF</b>									
1. Furniture	31,130.37			31,130.37	0%	-	31,130.37	-	-
2. Computer	4,992.46			4,992.46	0%	-	4,992.46	-	-
3. Electrical Equipment	17,213.84			17,213.84	0%	-	17,213.84	-	-
4. Electrical Fittings	6,320.68			6,320.68	0%	-	6,320.68	-	-
5. Office Equipment	3,400.00			3,400.00	0%	-	3,400.00	-	-
1. Air Condition (Dormitory)	-			-	-	-	-	-	-
<b>SUB TOTAL Rs.</b>	<b>16,328,774.67</b>	<b>10,903,279.68</b>	<b>-</b>	<b>27,232,054.35</b>		<b>4,688,398.00</b>	<b>22,543,656.35</b>	<b>10,906,949.53</b>	<b>4,688,398.00</b>
<b>TOTAL (a+b+c) Rs.</b>	<b>43,086,583.09</b>	<b>32,590,106.68</b>	<b>-</b>	<b>75,680,359.62</b>		<b>5,839,799.00</b>	<b>69,840,560.62</b>	<b>11,042,563.53</b>	<b>5,839,799.00</b>



**JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH**  
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**SCHEDULE H: LAND & BUILDING INVESTMENTS AS AT 31.03.2019**

PREVIOUS YEAR Rs.	PARTICULARS	Land and Bldg Fund Investment Rs.
	A. FIXED / TERM DEPOSITS	
	<b>A TOTAL Rs.</b>	-
	B. OTHER DEPOSITS	
-	<b>B TOTAL Rs.</b>	-
	C. BALANCE IN SAVINGS BANK	
-	<b>C TOTAL Rs.</b>	-
-	Balance as at 31.03.2019 as per Balance Sheet (A to C) <b>Rs.</b>	-

**SCHEDULE I: MOVABLE PROPERTIES FUND INVESTMENTS AS AT 31.03.2019**

PREVIOUS YEAR Rs.	PARTICULARS	Movable Properties Fund Investment Rs.
	A. FIXED / TERM DEPOSITS	
-	<b>A TOTAL Rs.</b>	-
	B. OTHER DEPOSITS	
-	<b>B TOTAL Rs.</b>	-
	C. BALANCE IN SAVINGS BANK	
-	<b>C TOTAL Rs.</b>	-
-	Balance as at 31.03.2019 as per Balance Sheet (A to C) <b>Rs.</b>	-

## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - J: OTHER FUND INVESTMENTS AS AT 31.03.2019

PREVIOUS YEAR	PARTICULARS	Total Other Fund Investments	Scholar Reserve Fund Investments	Development Fund Investments	Laboratory Fund Investments	JB Own Fund Investments	Staff Welfare & Medical Fund	Infrastructure Fund Investments	Other Investments	Total
Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
		A	B	C	D	E	F	G	H=A+B+C+D+E+F+G	
94,210,093.92	<b>A. FIXED / TERM DEPOSITS</b>									
	With State Bank of India, Kasba	27,849,165.00	12,628,443.39	10,167,017.00	1,500,000.00	3,000,000.00		553,704.61		27,849,165.00
	With State Bank of India, Jeevan Deep	1,100,000.00	1,100,000.00							1,100,000.00
	With State Bank of India, Salt Lake	807,838.00	807,838.00							807,838.00
	With United Bank of India	29,209,126.94		4,050,619.73	290,241.21	5,464,583.14	1,030,479.39	1,079,365.59	17,293,837.88	29,209,126.94
	With UCO Bank	30,000.00	30,000.00							30,000.00
	With HDFC Bank	2,044,000.00		2,044,000.00						2,044,000.00
<b>94,210,093.92</b>	<b>A TOTAL Rs.</b>	<b>61,040,129.94</b>	<b>14,566,281.39</b>	<b>16,261,636.73</b>	<b>1,790,241.21</b>	<b>8,464,583.14</b>	<b>1,030,479.39</b>	<b>1,079,365.59</b>	<b>17,847,542.49</b>	<b>61,040,129.94</b>
	<b>B. OTHER DEPOSITS</b>									
	<b>B TOTAL Rs.</b>									
	<b>C. BALANCE IN SAVINGS BANK</b>									
			1,886,316.70	1,661,918.20						3,548,234.90
	<b>C TOTAL Rs.</b>		<b>1,886,316.70</b>	<b>1,661,918.20</b>						<b>3,548,234.90</b>
<b>94,210,093.92</b>	Balance as at 31.03.2019 as per Balance Sheet (A to B) <b>Rs.</b>	<b>61,040,129.94</b>	<b>16,452,598.09</b>	<b>17,923,554.93</b>	<b>1,790,241.21</b>	<b>8,464,583.14</b>	<b>1,030,479.39</b>	<b>1,079,365.59</b>	<b>17,847,542.49</b>	<b>64,588,364.84</b>





**JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH**  
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**SCHEDULE K: LOANS & ADVANCES AS AT 31.03.2019**

PREVIOUS YEAR		CURRENT YEAR	
₹		₹	₹
<b>Security Deposits:</b>			
11,000.00	For Telephone	11,000.00	
96,894.10	For Electricity	<u>1,019,344.10</u>	1,030,344.10
<b>Loans &amp; Advances:</b>			
2,600.00	For Advance against Salary		
80,437.00	For Advance against Tour/Program (Staff)	2,600.00	
3,139.95	For Advance for Postage	3,169.95	
39,146.50	For Prepaid Expenses	-	
28,765.00	For Advance to Suppliers	59,199.00	
123.00	Tax Deducted at Sources	-	
-	GST Refund receivable	48,454.00	
1,325.00	Tax Deducted at Sources (Refundable)	<u>2,611.00</u>	116,033.95
<b>Receivables (Grants):</b>			
251,055.51	From Deptt of Higher Education, Govt of West Bengal (WBDS)	-	
896,155.00	From Deptt of Higher Education, Govt of West Bengal	-	
5,322.00	From Govt. of India, Vigyan Prasar	5,322.00	
179,786.72	From Govt. of India, Science & Engineering Research Bureau (SERB)	177,691.72	
-	From Govt. of India, Science & Engineering Research Bureau (SERB)	7,500.75	
129,127.00	From Deptt. of Science & Technology (SEATS), Govt. of India	168,127.00	
9,850.89	From Council of Scientific & Industrial Research, Govt. of India	<u>9,850.89</u>	368,492.36
<b><u>1,734,727.67</u></b>			<b><u>1,514,870.41</u></b>

## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE L: CASH AND BANK BALANCES as at 31.03.2019

PREVIOUS YEAR		CURRENT YEAR	
₹		₹	₹
26,449.00	<b>a) Cash in hand (As physically verified)</b>		89,464.00
	<b>b) Cash at Bank : (Held in Savings Bank Accounts with)</b>		
994.00	State Bank of India, Kasba(GAP02-PR)	1,048,580.80	
59,050.28	State Bank of India, Kasba(GAP03-AK)	61,144.28	
59,473.25	State Bank of India, Kasba(GAP01-PB)	12,649.25	
867,538.70	State Bank of India, Kasba (A/c No 10415825348)	1,886,316.70	
957,657.88	State Bank of India, Kasba (A/c No 10415825360)	1,661,918.20	
61,522.20	State Bank of India, Kasba (A/c No 10415825359)	837,878.20	
3,458,321.08	United Bank of India, Bosepukur Rajdanga (A/c No 5486)	5,767,205.24	
361,112.52	State Bank of India, Saltlake (A/c No 10836429242)	<u>440,921.52</u>	11,716,614.19
	<b>c) Cash at Bank : (Held in Current Accounts with)</b>		
62,556.00	State Bank of India, Kasba (CA-35061192770)	901,289.40	
10,000.00	State Bank of India, Kasba Branch (Current Account No. 33224282758)	<u>10,112.00</u>	911,401.40
	<b>d) Interest Accrued on Savings Bank Deposits</b>		
1.00	State Bank of India, Kasba(GAP02-PR)	603.00	
34.00	State Bank of India, Kasba(GAP03-AK)	35.00	
90.00	State Bank of India, Kasba(GAP01-PB)	7.00	
485.00	State Bank of India, Kasba (A/c No 10415825348)	1,058.00	
532.00	State Bank of India, Kasba (A/c No 10415825360)	948.00	
119.00	State Bank of India, Kasba (A/c No 10415825359)	525.00	
208.00	State Bank of India, Salt Lake (A/c No 10836429242)	<u>254.00</u>	3,430.00
-			
<b><u>5,926,143.91</u></b>			<b><u>12,720,909.59</u></b>



## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - "M"

#### ESTABLISHMENT

PREVIOUS YEAR		CURRENT YEAR	
₹			₹
8,526,336.00	Salary & Allowances		9,112,994.00
398,530.00	Leave Salary		433,430.00
61,656.00	Contribution to Provident Fund (Office)		61,656.00
<b>8,986,522.00</b>	<b>TOTAL</b>		<b>9,608,080.00</b>

### SCHEDULE - "N"

#### PROGRAMME EXPENSES

PREVIOUS YEAR		CURRENT YEAR	
₹			₹
	<b>I. Expenses funded by Deptt of Higher Education, Govt. of West Bengal</b>		
1,131,831.00	Annual Award Ceremony		493,914.00
-	- Talent Search Test		
-	- Awareness Program		
10,000.00	Best School Award		
52,379.00	Books & Journals		150,000.00
<b>1,194,210.00</b>	<b>Sub Total</b>		<b>643,914.00</b>
	<b>II. Expenses funded by Deptt of Higher Education, Govt. of West Bengal (WBDS)</b>		
40,951.00	Academic Meeting		21,387.00
-	- Base Line test		-
3,052,495.00	Science /Advanced Science Workshop		2,969,754.41
-	- Teachers' Training Program		-
-	- Project Competition		-
233,379.00	Special Program for Underprivileged Students		-
<b>3,326,825.00</b>	<b>Sub Total</b>		<b>2,991,141.41</b>
	<b>III. Expenses under Govt. of West Bengal [DHE - Junior Talent Search Test (JTST)]</b>		
120,000.00	Awareness Programmes		-
5,210.00	Contingencies		-
763,706.00	Science Workshop		-
146,626.00	Talent Search Tests		-
<b>1,035,542.00</b>	<b>Sub Total</b>		<b>-</b>



<b>IV. Expenses under Govt. of West Bengal [DST - Junior Talent Search Test (JTST)]</b>		
100,000.00	Aids to Schools for Establishment of Laboratories	
-	Annual award Ceremony	23,250.00
20,000.00	Best School Award	35,000.00
-	Encouragement award	104,000.00
892,000.00	Book Grant	1,030,500.00
3,792,000.00	Scholarship	4,764,000.00
-	Science Workshop	1,193,849.00
2,627,260.00	Talent Search Test	2,782,851.00
362,908.00	Awareness Program	478,506.00
21,000.00	Teaching Aid	139,697.00
663,793.00	Remunerations	868,573.00
224,678.00	Contingencies	257,348.00
-	Office Overhead	
-	Postage & Telephone	
<b>8,703,639.00</b>	<b>Sub Total</b>	<b>11,677,574.00</b>
<b>V. Expenses under Govt. of West Bengal [DST - Senior Talent Search Test (STST)]</b>		
455,000.00	Book Grant	605,000.00
1,064,360.00	Teaching Aids & Accessories (Laptop for students)	1,279,639.00
2,400,000.00	Scholarship	4,704,000.00
1,573,785.00	Talent Search Test	2,167,631.00
<b>5,493,145.00</b>		<b>8,756,270.00</b>
<b>VI. Expenses under Govt. of West Bengal [DST - Teachers' Training Programme (TTP)]</b>		
710,514.00	Activity based Workshop	
25,000.00	Manpower costs	
122,690.00	Fooding, Lodging & Refreshment Expenses	149,786.00
145,567.90	Consumables	85,913.00
23,730.00	Honorarium to Resource Personnel	30,500.00
31,407.00	Meeting Expenses for Workshop Planning	30,000.00
64,500.00	Travel for Mentors & Participants	99,580.00
<b>1,123,408.90</b>		<b>395,779.00</b>
<b>VII. Expenses under Govt. of West Bengal [DST - Talent Enrichment Programme (TEP)]</b>		
201,160.00	Seminar & Workshops	1,466,981.00
91,100.00	Support to Scholars for Research Projects	
	Manpower costs	55,645.00
1,035,033.00	Visit to research & Sc. Establishment	
72,128.00	Contingencies	21,659.00
<b>1,399,421.00</b>		<b>1,544,285.00</b>
<b>VIII. Expenses under Govt. of West Bengal [DST - Bigyani Kanya Medha Britti]</b>		
100,000.00	Book Grant	206,000.00
1,200,000.00	Scholarship	2,472,000.00
275,000.00	Manpower Costs	300,000.00
	Teaching Aids & Accessories (Laptop for students)	416,599.00
55,013.00	Workshop Expenses	
<b>1,630,013.00</b>		<b>3,394,599.00</b>
<b>IX. Expenses under Govt. of India [DST - SEATS]</b>		
871,000.00	Science Camps (INSPIRE)	910,000.00
<b>871,000.00</b>		<b>910,000.00</b>
<b>X. Expenses funded by Indian Council of Medical Research (ICMR)</b>		
357,500.00	Fellowship Stipend (Senior Research Fellow - Mr. Rudradip Pattanayak)	390,000.00
10,000.00	Contingencies	17,274.00
<b>367,500.00</b>		<b>407,274.00</b>



## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

### SCHEDULE - "O"

#### OFFICE & ADMINISTRATIVE EXPENSES

PREVIOUS YEAR		CURRENT YEAR	
₹		₹	
94,224.00	Postage, Telegram & Telephone	258,798.00	
35,400.00	Audit Fee	76,700.00	
173,037.87	Contingency	303,681.10	
437,774.50	Electricity	505,230.00	
101,909.00	Printing & Stationery	126,598.00	
682,725.62	City Conveyance	663,182.00	
357,120.00	Property Tax	357,120.00	
272,782.00	Pronouncement & Publicity	274,699.00	
342,732.50	Repairs and Maintenance (Computer & other equipment)	428,522.50	
301,313.00	Repairs and Maintenance (General)	451,185.00	
71,040.00	Repair & Maintenance (Dormitory)		
1,626,961.00	Repairs and Maintenance (Building)	2,038,953.00	
35,400.00	Professional Fees		
48,979.00	Legal and Filing Fees & Expenses	32,000.00	
969,833.00	Security Expenses	1,113,066.00	
366,461.00	Cleaning Expenses	472,606.00	
37,177.00	Staff Welfare Expenses	417,784.00	
270,000.00	Salary(Contractual)	323,670.00	
37,195.04	Depreciation on Assets pertaining to DHE, GoWB		
<b>6,262,064.53</b>		<b>7,843,794.60</b>	
<b>EXPENSES UNDER SCHOLARS' RESERVE FUND</b>			
Rs.		Rs.	
1,528,000.00	Scholarship	1,246,000.00	
109,000.00	Book Grant	117,000.00	
	Encouragement Award	1,000.00	
8,017.38	Workshop on Science & Scientist		
<b>1,645,017.38</b>		<b>1,364,000.00</b>	
<b>EXPENSES UNDER BIOTECHNOLOGY LABORATORY</b>			
Rs.		Rs.	
189,078.00	Remuneration to Contractual Employees at Biotechnology Laboratory	1,036,172.00	
3,886.00	Repair & Maintenance		
57,496.92	Science Workshop Biotechlaboratory	80,124.00	
1,297,169.52	Consumables Biotech Laboratory	654,910.00	
<b>1,547,630.44</b>		<b>1,771,206.00</b>	
<b>EXPENSES UNDER LABORATORY FUND</b>			
Rs.		Rs.	
40,710.00	Laboratory Fund Expenses	41,885.00	
47,961.00	Repair & Maintenance	420.00	
86,714.50	Depreciation		
<b>175,385.50</b>		<b>42,305.00</b>	
<b>EXPENSES UNDER JBNSTS-OWN FUND</b>			
22,143.00	Expenses under Govt of India (DST-Teachers' Training Programme)		
116,427.26	Depreciation		
<b>116,427.26</b>		<b>-</b>	

## JAGADIS BOSE NATIONAL SCIENCE TALENT SEARCH

1300, RAJ DANGA MAIN ROAD, KASBA, KOLKATA - 700 107

SCHEDULE - "P"

### SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31ST MARCH, 2019

#### A. General Information

Jagadis Bose National Science Talent Search (JBNSTS) is an Autonomous Institution registered under the Societies Registration Act, 1860 with financial assistances of the Deptt. of Higher Education and Deptt. of Science & Technology and Biotechnology, Govt. of West Bengal. The Institute was promulgated in the year 1958 to mark the Birth Centenary Celebration of India's foremost modern Scientist, Acharya Jagadis Chandra Bose. JBNSTS is the nation's first science talent search organization and over the last few decades, has catapulted itself to turn out to be a premier Institute of Non-formal Science Education in the country. The Institute has been tirelessly engaged in selecting students with special aptitude for Science, guiding and helping them to comprehend its importance and aim the process, building up the nation by developing its most precious resource – the human element.

#### B. Significant Accounting Policies

##### 1. Basis of Preparation of Financial Statements :

1.1. The financial statements are prepared on accrual basis under historical cost convention as per generally accepted accounting principles excepting employee benefits which are generally considered on cash basis.

##### 2. Revenue Recognition :

2.1. The Institute derives its revenues primarily from Grant-in-Aids, Donations, Registration and other Miscellaneous Fees from the participants to different Talent Search events and various Internal Resource Generation activities. Treatments as regards Grant-in-Aids are stated separately. Revenue / Income and Cost / Expenditure items are recognised on accrual basis. Revenue is recognised on completion of rendering of services and / or use of Society's resources by third parties.

2.2. Interest income from bank deposits is accrued using the effective interest method and as certified by the concerned bankers at the year-end in the relevant cases.

2.3. Interests earned on long / short term Investments and Savings Bank Deposits have been allocated proportionately to the respective Funds on the basis of their corresponding available investible surplus at the year-end, calculated after deducting the cash outflow towards the costs of the concerned Fixed Assets from the relevant Funds, except the following cases :

a) As regards the Contingency Fund, due to the attainment of the stipulated limit specified thereunder.



- b) Interests of Rs. 67,500/= (Previous Year - Rs. 81,000/= ) have directly been allocated to Scholar Reserve Fund.
- c) Interests on Long Term Investments and Savings Bank Deposits aggregating to Rs. 77,662/= generated from investments made out of Foreign Contributions being specific earnings of the Scholars' Reserve Fund and Development Fund, have been apportioned on the basis of respective balances of these Funds, worked out after charging off the related expenditures for the year from the corresponding Opening Balances standing at the commencement of the period under review.

### 3. Grants-in-Aid –

- 3.1. Capital Grants are being recognized and credited to the Land & Building Fund or the Movable Properties Fund respectively on receipt of the Sanction Memo.
- 3.2. Grants for meeting revenue expenditures are treated as income of the year in which corresponding expense are made. However Revenue Grants are recognized in books on actual Sanction.
- 3.3. Grants received in advance for activities to be performed / services to be rendered beyond the relevant financial period are reported as liabilities until all the conditions for revenue recognition are met.

### 4. Use of Estimates :

The preparation of the Financial Statements in conformity with the Generally Accepted Accounting Principles in India requires the Management to make estimates and assumptions considered in the reported amounts of assets and liabilities (including contingent liabilities) on the date of the Financial Statements and the reported amounts of revenue and expenses during the reporting period. The Management believes that the estimates used in preparation of the Financial Statements are prudent and reasonable. Future results could differ due to these estimates and the differences between actual results and the estimates are recognized in the period in which the results are known / materialise.

### 5. Fixed Assets :

- 5.1. All fixed assets other than land are stated at written down value without showing original cost and accumulated depreciation. Additions to Fixed Assets are stated at their original cost of acquisition (which includes direct expenditures incurred for acquisition or construction and/or installation of the assets and the share of indirect expenses comprised of attributable other costs including financial cost) and subsequent improvements thereto, as reduced by accumulated depreciation thereon and write down for impairment, if any. Direct costs are capitalised until fixed assets are put to use. Costs of assets not ready for use at the Balance Sheet date are disclosed under Capital Work-In-Progress. Capital gifts in kind are stated at gift deed value in the case of Land & Building and at market value in case of other Assets. Where-ever market values are not available, the capital gift-in-kind items are stated at nominal values, as per standard accounting principles. The Society creates the related Fund Account by transfer of sums from Income & Expenditure Account in respect of Fixed Assets acquired out of Society's own funds and not covered by Capital Donations

and / or Government Grants so as to exhibit the same balance under the Fixed Asset Account and the corresponding Fund Account.

- 5.2. However, Assets under Special Reserve Fund are stated at their respective costs of acquisitions less depreciation up to the date of considering the same as assets of the Institute. No depreciation is charged on assets received under programs or other old and used assets taken into account under Special Reserve Fund.
- 5.3. Gains or losses arising from disposal / discard of fixed assets are measured as the difference between the net disposal proceeds and the carrying amount of the corresponding assets and are recognized in the Income & Expenditure Account, when the relevant asset is derecognized.

#### **6. Investments :**

Investments that are readily realisable and intended to be held for not more than a year are classified as Current Investments. All other investments are classified as Long-term Investments. Current Investments are carried at lower of cost and fair value determined on an individual investment basis. Long-term investments are carried at cost. Provision for diminution in the value of investments is made, if the impairment is not temporary in nature.

#### **7. Foreign Currency Transactions :**

Transactions executed in foreign currencies are normally recorded at the exchange rate prevailing on the date of related transactions as computed and credited to the earmarked account by the concerned bankers handling the same.

Assets purchased in foreign currency are to be recorded at cost, based on the exchange rate on the date of purchase.

#### **8. Inter – Fund Transfers :**

Subject to the availability of adequate Surplus in the 'JBNSTS - Own Generation Fund', an amount of Rs. 1 Lac each is to be transferred at the end of each financial period in favour of the "Staff Welfare & Medical Fund" and "Infrastructure Development Fund" in order to strengthen the health of these Funds.

#### **9. Employee Benefits :**

- 9.1 Short Term Employee Benefit is recognized as expense in the Income & Expenditure Account of the year in which related service is rendered.
- 9.2 Post employment and other Long Term Employee Benefits are provided in the Accounts in the following manner :
- 9.3 Gratuity - In view of the fact that, Gratuities and Pensions are being paid to the eligible retiring employees directly by the Government of West Bengal, provisions towards liabilities for the same are not being made in the accounts.
- 9.4 Leave encashment on termination of service - Albeit, the provisions towards liabilities for terminal salary for Leave Encashment, payable to the eligible staff members used to be



made against the Maintenance Grants (Salary) being received from the Department of Higher Education, Govt. of West Bengal till Financial Year 2013-14, yet the requisite funds are not being made available in advance by the said Authority, thereafter. Further, expenditure towards Leave Encashment Salary is allowable only on actual payment basis under the Income Tax Act, 1961. Accordingly, the Society considers that, acknowledging the liability for terminal salary for Leave Encashment and creating a suitable resultant provision for the same, would be redundant. Thus, no liability towards the same is being provided for in the accounts.

- 9.5 As recited in last year, all permanent employees (both academic and non-academic) of the Institute have been privileged with the General Provident Fund facilities with effect from 1<sup>st</sup> September, 2016 through the kind approval of the Accountant General (A & E), West Bengal to that effect. Since the Institution is being funded by the Department of Higher Education, Govt. of West Bengal since its inception in the year 1958, no provision towards Provident Fund dues has been made in the current year.

#### **10. Provisions, Contingent Liabilities and Contingent Assets :**

- 10.1. Provisions are recognized when there is a present legal or statutory obligation as a result of past events and where it is probable that there will be outflow of resources to settle a reliably estimable.
- 10.2. Contingent Liabilities are recognized only when there is a possible obligation arising from past events due to occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the Society or where any present obligation cannot be measured in terms of future outflow of resources or where a reliable estimate of the obligation cannot be made. Obligations are assessed on as going basis and only those having a largely probable outflow of resources are provided for.
- 10.3. Contingent Assets are neither recognized nor disclosed in the Financial Statements. Provisions, Contingent Liabilities and Contingent Assets are reviewed at each Balance Sheet date.

#### **C. Changes in Accounting Policies**

During the year 2018-19 the Society has adopted some changes in its Accounting Policies, as per the guidance of its Statutory Auditors, which were necessary in order to make its financial statements more transparent and meaningful and which are in consonance to Generally Accepted Accounting Principles followed in India and provisions of Income Tax Act, 1961. The changes made are as follows:

##### **1. Creation of Corpus Funds and Effect of Change:**

In the absence of specific Corpus Funds, it was difficult to quantify any surplus available in such funds. As a result of this the Society created two funds viz. Land & Building Fund and Movable Properties Fund as on 01.04.2018 by transferring Rs 2,67,57,808.42 and Rs

1,72,27,942.92 respectively being the opening carrying amount of corresponding assets as on the same date, out of its Development Fund, Laboratory Fund, JBNSTS Own Generation Fund, Special Reserve fund and Unspent Grant Balance as on 01.04.2018 of Rs 8,78,63,263.49. The quantum of such transfers are shown in Schedule A & B i.e. Schedule of Land & Building Fund and Schedule of Movable Properties Fund.

#### 1.1 Fund Accounts:

Land & Building Fund and Movable Properties Fund: Specific receipts and earnings from investments ear-marked for that purpose are credited to Land & Building and Movable Properties Funds and depreciation is set off against these funds.

#### 1.2 Other Funds

Other funds includes Scholar Reserve Fund, Development Fund, Laboratory Fund, Special Reserve Fund, Contingency Funds, JBNSTS Own Generation Fund, Staff Welfare & Medical Fund, Infrastructure Fund and Retirement Benefit Fund. Surplus or deficit as generated from the activities are taken into the respective funds

### 2. Method of Charging Depreciation:

Previously the Society had the practice in charging depreciation on its Assets to its Revenue Accounts. Since a charitable society registered u/s 12AA and Section 10(23C) of the Income Tax Act, 1961 enjoys the benefit of deduction of Capital Expenses met out of its Revenue Income, charging further depreciation to its Revenue Accounts will mean claiming double deduction. Moreover charging depreciation to Income & Expenditure Account on Assets created out of Capital Grants / Donations will undermine the surplus as the corresponding Grant / Donation has not been credited to the revenue account. It is worth mentioning that depreciation is not an allowable expense, as per the provisions of The Income Tax Act, in case of Charitable Societies.

Depreciation on Fixed Assets is provided on 'Written Down Value Method' at the rates and in the manner prescribed under Income Tax Act, 1961 as would be amended from time to time.

Full year's depreciation is charged on additions to fixed assets irrespective of the date of acquisition / installation. No Depreciation is charged on the fixed assets sold / discarded during the year. Depreciation on fixed assets is set off against corresponding funds and not charged to Income & Expenditure Account.

#### Effect of the Change:

During the financial year the Society has set off depreciation on its Immovable Assets of Rs 11,51,401/- (calculated as per Schedule G) from its corresponding Land & Building Fund and depreciation on its Movable Assets of Rs 46,97,233/- (calculated as per Schedule G) from Movable Properties Fund. As a result of this change the Surplus for the year has been inflated to the extent of Rs 58,48,634/-.

#### D. Notes on Accounts

1. There are certain items of Fixed Assets, which have been purchased out of Grant-in-Aid in earlier years but which are no longer in use. These items of Fixed Assets are not included in Fixed Asset Register and are not readily marketable.
2. Some items of Electrical Equipments worth Rs 73,396.92 disposed off during the FY 2017-18, were wrongly shown as discarded from Electrical Fittings. Depreciation on Electrical Equipments was charged @ 15% whereas on Electrical Fittings was charged @ 10%. As a result of which depreciation on Electrical Equipments for FY 2017-18 was over-charged to the extent of Rs 62,387.38 and correspondingly depreciation on Electrical Fittings for FY 2017-18 was under-charged to the extent of Rs 66,057.23. During the current financial year the rectification was made and the same has been reflected in the Fixed Assets Schedule G (forming part of the Balance Sheet) and the corresponding net effect of Rs (66,057.23-62,387.38) i.e. of Rs 3,669.85 has been passed through Movable Properties Fund.
3. Fees paid to the Kolkata Municipal Corporation during FY 2017-18 for sanctioning New Building Plan for the construction of the Innovation Centre, of Rs. 21,26,417/= (along-with the corresponding Bank Charges of Rs. 9,572/=) was capitalized to Fixed Asset (under the head Capital work- in-progress) in the same year. The above expenditure was appropriated out of Maintenance Grants received from the Deptt. of Higher Education, Govt. of West Bengal. However, the corresponding entry for the afore said utilization was not passed in FY 2017-18 and hence the Unspent Maintenance Grant Balance as on 01.04.2017 (Schedule D) of Rs 60,03,960.94 has been overstated to the extent of Rs 21,35,989/-. Hence Rs 21,35,989/- has been transferred from Unspent Grant to Land & Building Fund to rectify the afore said mistake.
4. Liabilities towards Scholarship of Rs 28,95,582/-, Book Grants of Rs 3,65,003/- and Best School Award of Rs. 15,000/-(shown in total Current Liabilities, Schedule E), includes Rs. 14,25,129/-, being dues payable in respect of several earlier years till 2015-16, as the same could not be discharged due to non-submission of the requisite information and documents by the concerned beneficiaries.
5. In consonance with resolution passed in the AGM held on 13<sup>th</sup> December, 2018 for FY 2017-18, Liabilities towards Scholarship of Rs 6,21,271/- and Book Grants of Rs 1,66,360.50 being unclaimed amounts till 2010 have been written back to our Revenue Accounts during the year 2018-19 and the same has been transferred to Scholar Reserve Fund which will be utilized in future for any purpose related to the academics of the scholars.
6. The Society does not have share capital. Hence disclosure of Earnings per Share as per Accounting Standard 20 – Earnings per Share is not applicable to the Society.
7. All the figures have been denominated in Indian Rupee.



8. Schedules "A" to "P" form an integral part of the Financial Statements.
9. The previous year's figures have been regrouped / recast / rearranged, wherever considered necessary.

Dated: the 12<sup>th</sup> day of September, 2019

Place: Kolkata

On behalf of the Governing Body

Sd/-

**Prof. ( Dr. ) Maitree Bhattacharyya**  
( Director )

For, M. Saha & Co  
Chartered Accountant Firm  
Regn. No. : 305135E

Sd/-

**CA Debarshi Saha**  
Partner  
(Memb. No: 061398)



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