

DST-INSPIRE INTERNSHIP SCIENCE CAMP - 2012



Department of Science & Technology
Govt. of India

In association with



Jagadis Bose National Science Talent Search
Govt. of West Bengal

Science Camp Entitled:

“বিজ্ঞানের রূপরেখা”

During January 17 – 21, 2012

At JB Centre of Excellence for Student Scientists



Jagadis Bose National Science Talent Search

1300, Rajdanga Main Road, Kasba, Kolkata-700 107

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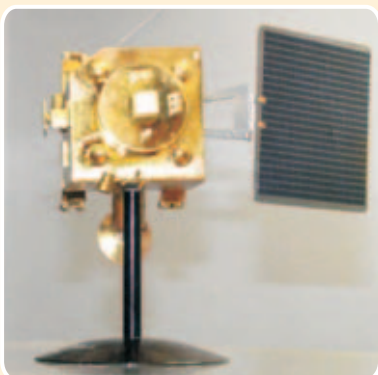
Website : <http://www.jbnsts.org>

Jagadis Bose National Science Talent Search

1300, Rajdanga Main Road, Kasba, Kolkata – 700 107

About JBNSTS

Jagadis Bose National Science Talent Search (JBNSTS), Kolkata was conceptualized in 1958 by visionaries such as Dr. B C Roy, Sir J J Ghandy and others to commemorate the Birth Centenary Celebration of India's first modern scientist, Acharya J C Bose. The program was inaugurated by Pandit Jawaharlal Nehru. JBNSTS is an autonomous institute promoted by the Department of Higher Education, Government of West Bengal. It is administered by a Governing Body with representatives from the State Government, academia and industry. Since 1961, JBNSTS is awarding the prestigious Jagadis Bose Scholarships to selected group of undergraduate students of science, engineering and medicine.



In the last five decades, JBNSTS has grown to become a premiere institute of non-formal science education in the eastern and northeastern States of India with the objective towards pursuit of excellence through motivation, identification and nurture of young talented science students. It helps students to realize the importance of excellence in the scientific world and try to cultivate this in their own lives as students of science. JBNSTS also encourages students towards the learning of basic sciences and inculcates scientific spirit in the minds of young high school and undergraduate students. Focus has been on unconventional and dynamic methods of non-formal accelerated learning through "out-of-class" activities, which have led to the recognition of intellectually sensitive and inquisitive minds. Since 2004, JBNSTS has launched an innovative middle school science Teachers Training Program which has brought into its ambit motivated teachers from the districts of West Bengal. JBNSTS has developed science kits and distributed to the teachers for demonstrating scientific principles to the middle school students in the classroom. The financial support for most of the activities of JBNSTS is provided by the Department of Higher Education & Department of Science & Technology, Government of

West Bengal. In addition, Council of Scientific & Industrial Research (CSIR), Department of Science & Technology (DST), Government of India & Industries also collaborate with JBNSTS activities.

About DST-INSPIRE Program

INnovation in Science Pursuit for Inspired REsearch (INSPIRE) is an innovative programme being implemented by the Department of Science and Technology (DST), Govt. of India. The basic objective of INSPIRE is to communicate to the youth of the country the excitement of creative pursuit of science, attract talent to the study of science at an early age and thus build the



required critical human resource pool for strengthening and expanding the Science & Technology System and Research & Development base. Under the INSPIRE project 'Scheme for Early Attraction of Talents for Science' (SEATS) is a program to inspire talented Science students (top 1% performers in class-X board examination) into basic science streams.



A striking feature of the programme is that it does not

believe in conducting competitive exams for identification of talent at any level. It believes in and relies on the efficacy of the existing educational structure for identification of talent and builds on opportunities that can be derived within the systems.

Science camps are a great way for children to explore the principles and methods of scientific research and strive to get young people interested in science at an early age. They are based on concepts of facilitated self-learning, holistic education, group activities, exchange of cross-cultural ideas, motivation towards independent thought and action and forming life-long friendships with similar minded people and established scientists. Leadership, passion and appreciation of the nature around us are invaluable characteristics for future scientists, and the Science Camp activities strive to encourage these traits.

Organizing Committee

Chief Patron:

Dr. A. Mukhopadhyay, DST, Govt. of India

Academic Committee:

Prof. (Dr.) Papiya Nandy, Hony. Director, JBNSTS

Dr. Paromita Roy, JBNSTS

Dr. Smarajit Manna, JBNSTS

Dr. Abhijit Kar, JBNSTS

Conducted by : JBNSTS

Mentors

Dr. Subhash Chandra Bhattacharyya

Professor of Chemistry & Dean, Faculty of Science
Jadavpur University, Kolkata

Dr. Ashesh Nandy

Centre for Interdisciplinary Research & Education, Kolkata

Dr. Siddhartha Sen

Emeritus Fellow
Institute of Nano-science
Trinity College, Dublin, Ireland

Dr. D.P. Duari

Director, Research & Academics
M.P. Birla Planetarium, Kolkata

Dr. Paromita Roy

Deputy Director, JBNSTS, Kolkata
Prof. Siddhartha Datta
Pro Vice Chancellor
Jadavpur University, Kolkata

Dr. Abhijit Kar

Scientific Officer
Jagadis Bose National Science Talent Search, Kolkata

Dr. Smarajit Manna

Student Advisor
Jagadis Bose National Science Talent Search, Kolkata

Shri Debashis De Munshi

Junior Research Fellow
Raman Center for Atomic, Molecular and Optical Sciences
Indian Association for the Cultivation of Science, Kolkata

Shri Salil Chakraborty

Department of Physics (H.S. Section)
Ramakrishna Mission Vidyapith, Purulia



Prof. Partha Ghose

Senior Scientist Platinum Jubilee Fellow
National Academy of Sciences, India
Bose Institute, Kolkata

Dr. Arindam Rana

Department of Chemistry
City College, Amherst Street, Kolkata

Dr. Antara De

Biologist, formerly at SINP, Kolkata

Dr. Chitra Mandal

Professor & Head, Cancer and Cell Biology
Indian Institute of Chemical Biology
Jadavpur, Kolkata – 700 032

Dr. Subodh Mahanti

Scientist 'F' & Academic Head
Vigyan Prasar
A-50, Institutional Area, Sector-62,
Noida - 201309, U.P.

Dr. Siddhartha Roy

Professor and Director
Indian Institute of Chemical Biology, Kolkata



Name of the participating schools:

- Purulia Chittaranjan High School, Purulia
- Purulia Zilla School, Purulia
- Ramakrishna Mission Vidyapith, Purulia
- Kenduadihi High School, Bankura
- Bankura Barjora High School, Bankura
- Tamluk Hamilton High School, East Midnapur
- Krishnanagar Collegiate School, Krishnanagar
- Tarakeswar High School (H.S.), Hooghly
- Sekendrapur Rai K.P Bahadur High School, Hooghly
- Purulia Govt. Girls' High School, Purulia
- Santamoyee Girls' High School, Purulia
- Krishnath College School, Murshidabad
- Jiaganj Raja Bijoy Singh Vidyamandir, Murshidabad
- Canning David Session High School, South 24 Pgs.
- Lalgola MM Academy, Murshidabad
- Berhampore Maharani Kasheswari Girls' High School, Murshidabad
- Sonarpur Sarada Vidyapith, South 24 Pgs.

CAMP RULES

Welcome to the Science Camp “বিজ্ঞানের রূপরেখা”

Here you will have a unique experience of learning science through active interaction with great scientists and be encouraged to share your ideas with others. No test/grade – only learning science in a different way.

Please note the following points carefully:

1. The camp hours are from **09:30 a.m. to 8:00 p.m.** You are to attend all the sessions in your school uniform.
2. You are required to submit an attested copy of your Xth Standard Board Examination Mark Sheet, held in 2011, during the morning registration on **18th January, 2012** at registration desk.
3. You are required to fill up the STUDENT’S INFORMATION SHEET & FEED BACK SHEET and submit it on **21st January, 2012 at registration desk during afternoon registration.**
4. Travel bills (bus, auto and / or train fare only) are to be submitted along with relevant documents (tickets) on **17th January, 2012** during 05.00 p.m. – 06.00 p.m. (tiffin break) at registration desk. Your reimbursement will be made on **20th January, 2012 between 05.00 p.m. to 06.00 p.m.**
5. Book bill(s), authorized by respective Headmaster/ Headmistress, are to be submitted on **17th January, 2012** during 05.00 p.m. – 06.00 p.m. (tiffin break) at registration desk. Your reimbursement will be made on **20th January, 2012 between 05.00 p.m. to 06.00 p.m.**
6. All the participants will be divided into groups. There will be a group leader for each group selected by group members of each group. A very interesting contest awaits for you on **20th January, 2012**. On that day each group will be provided with some drinking straws, cello tape, threads, sheets of Newspaper and TWO raw eggs. The challenge is to construct an arrangement with these materials and put one whole raw egg in it in such a way that when the whole thing is dropped from a certain height and hits the concrete ground, the EGG WILL NOT BREAK! And oh, yes ! There will be a prize for the best contraption!
7. You will not be given any home work, but you are expected to interact freely with the experts, your group members and other groups.

On the last day i.e. **21st January, 2012** you will receive the Participation Certificate.

Dates to remember for submission of different documents and reimbursements:

- 17/01/2012 : Submission of travel bill and book bill
- 18/01/2012 : Submission of attested copy of Mark Sheet during morning registration.
- 20/01/2012 : Reimbursement of travel bill and book bill
- 21/01/2012 : Submission of Information and Feed Back Sheet

BRIEF INTRODUCTION TO THE EXPERTS

DR. PAPIYA NANDY

Prof. Papiya Nandy received her Masters degrees in Physics from University of Calcutta and University of California at Santa Barbara and Ph.D. on Liquid Crystals from Kent State University, USA. Her post-doctoral work was in Experimental Biophysics from Max Planck Institute, Gottingen, Germany. Later she was Associate Professor of Physics in University of Ulm, Germany. She joined Physics department in Jadavpur University and besides teaching for more than 35 years in the Science and Engineering faculties, she was and still is in charge of several research projects. Her field of research encompasses membrane biophysics, numerical analysis of DNA and protein sequences and application of Nanomaterials in ceramics and bio systems. She has more than hundred research publications in peer reviewed journals and 3 patent awards. She has guided 12 Ph.D. Thesis and 20 Masters Thesis. She is currently the Emeritus Fellow of Jadavpur University and the Hony. Director of JBNSTS, of which she is a scholar from the first batch in 1960. Here her objective is to make JBNSTS a vibrant and dynamic institute and to motivate, identify and nurture young talented science students and establish the base of Scientific enquiry and culture of tomorrow.

DR. SUBHASH CH. BHATTACHARYA

Dr. Bhattacharya is currently the Professor of Chemistry and Dean, Faculty Council of Science, Jadavpur University, Kolkata. He is also the Coordinator, Centre for Surface Science, Department of Chemistry, Jadavpur University. He is the Fellow of West Bengal Academy of Science and Technology and visited different prestigious foreign universities and institutes as Visiting Professor. His research interest lies on Bio-Physical Chemistry, Photochemistry, Surface Chemistry, Nanomaterials Till date, under guidance of Dr. Bhattacharya, 19 students have already been awarded with Ph.D. degree, 8 students are working for their Ph.D. degree. He has supervised several Research and Development projects and guided 20 M.Sc. students for their final year projects. He has made 114 journal publications in reputed national and international journals and published 2 text books.

DR. ASHESH NANDY

Dr. Ashesh Nandy is currently associated with Center for Interdisciplinary Research and Education, Kolkata. He is a member of the Condensed Matter Physics Research Centre, Jadavpur University. He did his B.Sc. and M.Sc. in Physics from Calcutta University and received his Ph.D. from University of California, Santa Barbara, USA. He was a postdoctoral fellow of Syracuse University, U.S.A, Max plank Institute, Goettingen, Germany. He was associated with the Computer Division of Lipton India Ltd and IICB, Kolkata, School of Environmental Sc., Jadavpur University as Visiting Scientist. He was a recipient of several scholarships: Earle C Anthony Fellowship from University of California, Max Plank institute fellowship and is a JBNSTS scholar of first batch. His current research interest focuses on bioinformatics.

DR. SIDDHARTHA SEN

Professor Siddhartha Sen is a former Head of the School of Mathematics and founding Deputy Director of the Hamilton Mathematics Institute of Trinity College Dublin. Currently he is an Emeritus Fellow of Trinity and consultant for a research group in nanophysics. Professor Sen is a Member of the Royal Irish Academy and has a ScD degree from MIT. His research is in different areas of mathematical physics.

DR. D. P. DUARI

Dr. D P Duari is presently the Director, Research & Academic of M. P. Birla Institute of Fundamental Research, M. P. Birla Planetarium, Kolkata and Honorary Faculty, Physics Department, Presidency College. He did his B.Sc. & M.Sc. in Physics from Jadavpur University and Ph.D. from Inter University Centre for Astronomy & Astrophysics, Pune. He was a Post Doctoral Fellow of Tata Institute of Fundamental Research. He was associated with a number of distinguished academic institutions including Institute for Advanced Studies, Iran, University of Cambridge, U. K., and Manchester Institute of Science & Technology, U. K. He is a fellow of Royal Astronomical Society and a member of International Astronomical Union.

DR. PAROMITA ROY

Dr. Paromita Roy did her Bachelors in Psychology (with special paper in family counseling), as well as in Masters in Industrial Psychology and Organizational Behavior from Delhi University. She received her PhD from Delhi University in Clinical Psychology and worked in the field of cognitive deficits in schizophrenia from Delhi University. Dr. Roy has extensive field experience in the area of clinical psychology. Her expertise is in educational psychology, soft skill training, human resource development, curriculum planning, strategy development, pedagogy, teacher training and student counseling. She has been with JBNSTS since 1993. Her focus is on educational paradigms with a socio-holistic view. With her long experience with creative science students and teachers, she has been instrumental in designing tailor made science enrichment programs.

DR. SIDDHARTHA DATTA

Dr. Siddhartha Datta is currently Professor Chemical Engineering Department and Pro-Vice-Chancellor Jadavpur University. He did his Bachelors and Masters in Chemical Engineering and PhD in Engineering from Jadavpur University. Dr. Datta got many prestigious awards such as Sir Ganga Ram Memorial Medal in 1995-96 for the best paper published in the Journal of the Institution of Engineers, ENVIRONMENT 2005 award in recognition of outstanding contributions towards Environment Protection in West Bengal. In many occasions he has represented Jadavpur University in Hungary and USA. . He has served as Member, Expert committee of AICTE, and also as Director (Hony), Centre for Rural and Cryogenic Technologies, Kolkata under DST, Govt. of West Bengal. He has about 28 years of teaching and research experience in the Department of Chemical Engineering, Jadavpur University and guided about 30 Ph.D Thesis and more than 30 Masters Thesis. Written several books and patented many discoveries. He has published 207 scientific papers in different national/international journals and conference proceedings.

DR. ABHIJIT KAR

Dr. Abhijit Kar received his Bachelors and Masters in Chemistry. He did his PhD in Science (Chemistry) from Jadavpur University. Dr. Kar has carried out his postdoctoral research in different parts of the world and developed very high aptitude towards cutting edge research. He did his Post Doctoral research at Sungkyunkwan University, South Korea. He has worked at Swiss Federal Laboratory at Zürich, Switzerland. He has also worked as visiting scientist at Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), R hr Universit t, Germany. His current research interest comprises of Application of nanotechnology for Micro- Electronics, Nanostructured composites and energy devices, Photo voltaics, Thin film and

Nanomultilayer structure for advanced materials. He has worked on Thermodynamic modeling using Thermocalc, DICTRA and Phase field Modeling using MICRESS and he has developed expertise on Different materials characterization techniques e.g: SEM, TEM, XRD, EPMA & Mechanical property evaluation of materials. Dr. Kar has published 32 research papers in SCI Journals contributed in book chapter on electron microscopy and serves as reviewer of many International Peer Reviewed Journals. He is also recipient of National Scholarship and CSIR-SRF. He is currently working as Scientific Officer of JBNSTS and looking after different academic and research activities and Laboratory set up of JBNSTS.

DR. SMARAJIT MANNA

Smarajit Manna did his B.Sc and M.Sc in Physics. Worked as Junior Research Fellow and Senior Research Fellow at Jadavpur University and Delhi University South Campus respectively and received his Ph.D. degree from Jadavpur University Currently working as Student Advisor at JBNSTS, Kolkata. His research interest includes conduction mechanism through biological membranes and the underlying dynamics. His research interests are Statistical analysis of dynamical systems and Bio-informatics. Dr. Manna has 8 research publications in national and international journals and he is one of the authors of the book chapter “Electrical noise in cells, membranes and neurons in: Understanding Complex Systems”, Springer Berlin/Heidelberg. He is working as Student Advisor of JBNSTS and apart from guiding students he is carrying out different academic and research work.

SHRI DEBASHIS DE MUNSHI

Shri Debashis De Munshi is currently pursuing Ph.D at IACS, Kolkata. He did his Masters in Physics from S.N. Bose National Centre for Basic Sciences (SNBNCBS), Kolkata in 2010. He is the recipient of Jagadis Bose National Science Talent Search scholarship (2005) and Undergraduate associateship of Saha Institute of Nuclear Physics (SINP) (2006). He has also got the Shyama Prasad Mukherjee Fellowship (2011). Debashis has worked on different experimental and theoretical projects in the field of Change of mechanical properties of polymer thin films in the presence of gold nanoparticles; Dilute Magnetic Semiconductors etc. His current research field is experimental quantum optics and developing a single ion trap and laser cooling facility.

DR. ARINDAM RANA

Dr. Arindam Rana is presently Associate Professor of Chemistry at City College, Kolkata. He did his M.Sc from Calcutta University, Ph.D. research at IACS, Kolkata and received Ph. D degree from Jadavpur University. He went to Univ. of Notre Dame, Indiana, USA for post doctoral research. He has 6 papers in International journals. In his academic career he occupied several positions such as Honorary guest faculty in chemistry at the HS section of St. Lawrence High School & Mahadevi Birla Sisu Vihar. Dr. Rana is actively engaged in science Outreach programmes of Ratnasagar Pvt. Ltd. and recognized by TIFR as one of the most inspiring teachers on the occasion of the birth centenary of Homi J. Bhabha in 2009.

DR. ANTARA DE

Dr. De did her B.Sc. with Zoology Hons. from Calcutta University, M.Sc. in Zoology from Delhi University and Ph.D. in Biological Sciences from University of Warwick, UK. She worked as a post-doctoral fellow in several distinguished places such as Crystallography and Molecular Biology Division, Saha Institute of Nuclear Physics, Kolkata and Toxin Research Group, Department of Biological Sciences, University of Warwick, UK.

SHRI SALIL CHAKRABORTY

Shri Chakraborty did his M.Tech. with Optoelectronics as special paper from Calcutta University in 1971. He started his career as a lecturer of Physics at Jangipur College. Then he joined Department of Planning and Development, Raj Bhavan, West Bengal as Junior Scientific Officer. After that Shri Chakraborty joined UCO Bank and hold the position of Branch Manager in different branches inside and outside of West Bengal. After retirement, he joined the Department of Physics, Ramakrishna Mission Vidyapith, Purulia in 2010. Till date he has published more than 30 articles in different popular science magazines like জ্ঞান ও বিজ্ঞান, প্রকৃতি, উদ্বোধন, যুবমানস, Science Reporter etc. He has published 2 research papers in Journal of Optical Society of India.

PROF. PARTHA GHOSE

Dr. Ghose is a Senior Scientist, Platinum Jubilee Fellow (National Academy of Sciences, India) and is associated with Center for Astro Particle Physics & Space Science, Bose Institute. He was also a former faculty of SN Bose National Centre for Basic Sciences, Kolkata. He did his graduation and doctorate from Calcutta University. He has occupied distinguished positions in different academic institutions in India and abroad. Prof Partha Ghose has written many popular science articles in Bengali and English for various Journals and magazines and dailies. He was associated with the production of videocassette series on 'Classical Mechanics' and 'Quantum Theory' for UGC Country- wide Classroom series. Prof Ghose was associated with many episodes of the popular television science serial titled 'Quest'. He has also been a part of different science programs involving students from various levels. Prof. Ghose was the joint conductor of the first Science Camp of JBNSTS and held in November, 2006.

DR. CHITRA MANDAL

Dr. Mandal is currently Professor and Head, Cancer and cell Biology Division, Indian Institute of Chemical Biology, Kolkata. She did her M.Sc. in Organic Chemistry, Ph.D. in Bio-Organic Chemistry from Indian Institute of Science, Bangalore and post-dock on molecular Immunology at University of Pennsylvania, USA. Main theme of her research group is to understand the mystery of glycosylation of biomolecules to investigate disease-related problems. She has opened up new avenues in sialoglycobiology. Dr. Mandal is an elected fellow of all three Indian academies (The Indian Academy of Sciences, National Academy of Sciences and Indian National Science Academy) and West Bengal Academy of Science and Technology. She is a recipient of prestigious "Sir J.C. Bose National Fellowship" Award (2010) by DST, Dr. Yellapragada Subba Rao Memorial Lecture Award (2011) by INSA, "Senior Scientist Oration Award" (2008) by Indian Immunology Society, 'BioTech Product and Process Development and Commercialization Award' (2005) by DBT, 'Kshanika Oration Award' (2002) by ICMR, The P. B. Rama Rao Memorial Award (2001) by S.B.C and 'Smt Chandaben Mohanbhai Patel Industrial Research Award' (2000) by VASVIK.

DR. SUBODH MAHANTI

Dr. Subodh Mahanti, a well-known science communicator, did his BSc (Honours) from Burdwan University (1976) and MSc from Banaras Hindu University (1978). He was awarded National Scholarship for studying in MSc and BHU Gold Medal for standing first in MSc. He did his PhD in Organic Chemistry (1982) and subsequently worked in Molecular Biology. For the last 20 years he has been working in the field of science popularisation. Presently he is with Vigyan Prasar, an autonomous organisation set up by the Department of Science & Technology, Government of India, for taking up large-scale science popularisation tasks and has co-ordinated a number of nationwide programmes undertaken by Vigyan Prasar. Dr. Mahanti has received a numbers of awards for his contributions in the field of science popularisation including NCSTC National Award for Best Science and Technology coverage in Mass Media for the year 2003. Among other awards received by Dr. Mahanti include FIE Foundation National Award (2000), Delhi Hindi Academy Award (2006), Dr. Meghnad Saha Award (2005), and Atma Ram Purashkar of the Kendriya Hindi Sansthan, Agra Ministry of HRD, Government of India (2007). Dr. Mahanti writes both in Hindi and English. Besides his research papers, he has written more than 300 popular science articles and edited/authored/co-authored more than 20 books including:

PROF. SIDDHARTHA ROY

Prof. Siddhartha Roy is currently the Director of Indian Institute of Chemical Biology (IICB-CSIR) Kolkata. After completing his Bachelors from Presidency College in Chemistry he did his PhD in Biochemistry from University of Delaware, Newark, Delaware, USA. Later he did his post doctoral research in many distinguished places across the world such as Brandeis University, Waltham, Massachusetts, USA, National Institutes of Health, Bethesda, Maryland, USA and Bose Institute Kolkata, India. Formerly he was holding a Departmental Chair Professorship at Bose Institute, Kolkata. He is recipient of several prestigious awards and fellowships, which includes Shanti Swarup Bhatnagar Award and J.C. Bose Fellowship (Department of Science and Technology). He is also Fellow of Indian National Science Academy (F.N.A.), Fellow of Indian Academy of Sciences (F. A. Sc.), President, West Bengal Academy of Science and Technology. His current research interest is Drug design, Protein-nucleic acid interaction, Protein and peptide Engineering. He has published more than 100 articles in different international journals, written book chapters and guided several PhD students.

A JBNSTS-DST-INSPIRE Science Camp

“বিজ্ঞানের রূপরেখা”

(17th – 21st January, 2012) JB Centre of Excellence for Student Scientists,
1300, Rajdanga Main Road, Kasba, Kolkata 700 107

Paste
Stamp-size
Photograph
here

Student's Information Sheet

Name of the student (in block letters):

Permanent address with contact number and e-mail ID (mandatory):

School's name (in block letters) & Address with pin code & phone no.:

Percentage of marks obtained in the 10th standard Board examination held in 2011:

Percentage of marks obtained in science subjects:

Favorite subject:

Who is your role model in science?

Would you like to pursue a career in science?

What is your expectation from a science camp?

स जीवति मनो यस्य मननेन हि जीवति

Have you heard about JBNSTS before the camp? How?

Signature of Student

A JBNSTS-DST-INSPIRE Science Camp

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Feedback Sheet

Name of the student (in block letters):

School's name (in block letters) & address with pin code, phone no. & email-id:

What is your opinion about this science camp? Which of the sessions have you enjoyed more and why? How does it motivate you to pursue your future?

Your comments on how the science camp could have been made better?

स जीवति मनो यस्य मननेन हि जीवति

Signature of Student

Day to Day Program

Day 1 : Tuesday, January 17, 2012

- 10:00 a.m. – 10:30 a.m. Registration
- 10:30 a.m. – 11:00 a.m. Welcome Address and Orientation by JBNSTS
- 11:00 a.m. – 12:00 noon **Inaugural Lecture on “Prospects of Science”**
Dr. Subhash Ch. Bhattacharyya, Professor of Chemistry & Dean, Faculty of Science
 Jadavpur University, Kolkata
- 12:00 noon – 01:00 p.m. **“Team Spirit”**
Dr. Ashesh Nandy, Center for Interdisciplinary Research and Education, Kolkata
- 01:00 p.m. – 02:00 p.m. Lunch & Interaction
- 02:00 p.m. – 03:30 p.m. **“Different Faces of Mathematics”**
Dr. Siddhartha Sen, Emeritus Fellow, Institute of Nano-science, Trinity College, Dublin, Ireland
- 03:30 p.m. – 05:00 p.m. **“Recent Concepts in Astronomy and Astrophysics”**
Dr. D.P. Duari, Director, Research & Academics, M.P. Birla Planetarium, Kolkata
- 05:00 p.m. – 06:00 p.m. Tiffin Break (**Submission of Book Bill and Travel Bill**)
- 06:00 p.m. – 07:30 p.m. **Student Counseling**
Dr. Paromita Roy, Deputy Director, JBNSTS, Kolkata

Day 2 : Wednesday, January 18, 2012

- 09:30 a.m. – 10:00 a.m. Registration (**Submission of attested copy of Xth Standard Board Examination Mark Sheet**)
- 10:00 a.m. – 01:00 p.m. **“Innovative Product for Community Development”**
Dr. Siddhartha Datta, Pro Vice Chancellor, Jadavpur University, Kolkata
- 01:00 p.m. – 02:00 p.m. Lunch & Interaction
- 02:00 p.m. – 05:00 p.m. **Hands-on Experiments at JBNSTS Laboratory**
Dr. Abhijit Kar, Scientific Officer, JBNSTS & **Dr. Smarajit Manna**, Student Advisor, JBNSTS
- 05:00 p.m. – 06:00 p.m. Tiffin Break
- 06:00 p.m. – 07:30 p.m. **“Curiosity: The Heart of Science”**
Shri Debashis De Munshi, Junior Research Fellow, Raman Center for Atomic, Molecular and Optical Sciences, Indian Association for the Cultivation of Science, Kolkata

Day 3 : Thursday, January 19, 2012

- 09:30 a.m. – 10:00 a.m. Registration
- 10:00 a.m. – 11:00 a.m. **“Vedic Mathematics”**
Shri Salil Chakraborty, Dept. of Physics (H.S. Section), Ramakrishna Mission Vidyapith, Purulia
- 11:00 a.m. – 01:00 p.m. **“Who's Afraid of the Big Bang and the God Particle?”**

Dr. Partha Ghose, Senior Scientist Platinum Jubilee Fellow, National Academy of Sciences, India
Bose Institute, Kolkata

01:00 p.m. – 02:00 p.m. Lunch & Interaction

02:00 p.m. – 05:00 p.m. **“Chemistry Activities: Text Book Equations & Life”**

Dr. Arindam Rana, Department of Chemistry, City College, Amherst Street, Kolkata

05:00 p.m. – 06:00 p.m. Tiffin Break

06:00 p.m. – 07:30 p.m. **“Cloning: A Brief Introduction”**

Dr. Antara De, Biologist, Kolkata

Day 4 : Friday, January 20, 2012

08:45 a.m. – 09:00 a.m. Registration & Departure for Science City, Kolkata

10:00 a.m. – 12:30 p.m. **Educational Visit to Science City, Kolkata**

12.30 p.m. – 12.40 p.m. Departure from Science City, Kolkata

01:00 p.m. – 02:00 p.m. Lunch & Interaction

02:00 p.m. – 03:00 p.m. **“Scientific Research: Meeting the Challenges of Human Health”**

Dr. Chitra Mandal, Professor & Head, Cancer and Cell Biology
Indian Institute of Chemical Biology, Kolkata

03:00 p.m. – 05:00 p.m. **Egg Dropping Contest**

05:00 p.m. – 06:00 p.m. Tiffin Break **(Reimbursement of Book Grant and Travel Bill)**

06:00 p.m. – 07:30 p.m. **Cultural Program**

Dr. Gurupada Das, Classical Vocalist

Day 5 : Saturday, January 21, 2012

09:30 a.m. – 10:00 a.m. Registration

10:00 a.m. – 11:30 a.m. **“Science is.....”**

Dr. Subodh Mahanti, Scientist 'F' & Academic Head, Vigyan Prasar, Noida, Uttar Pradesh

11:30 a.m. – 01:00 p.m. **Valedictory Lecture**

Dr. Siddhartha Roy, Professor and Director, Indian Institute of Chemical Biology, Kolkata

01:00 p.m. – 02:00 p.m. Lunch & Interaction **(Submission of information cum feedback sheet during afternoon registration)**

02.00 p.m. – 04:00 p.m. **Science Quiz**