



A report on three days extension activity at Jagadis Bose National Science Talent Search (JBNSTS), Kolkata

THEME OF THE EVENT: Biotechnology Skill Developmental Workshop

ACADEMIC SESSION: 2025-2026

DATE: 7.01.2026 to 9.01.2026

VENUE: Biotechnology Laboratory, JBNSTS, 1300Rajdanga Main Road, Kolkata -700107

OBJECTIVE/ PURPOSE: To provide undergraduate students with hands-on training in fundamental biotechnology, while fostering interdisciplinary teamwork, scientific communication skills, and exposure to research-oriented laboratory practices.

RESOURCE PERSON: The workshop was conducted under the guidance of **Dr. Arnab Pramanik (Senior Scientist)** and **Dr. TamalikaSanyal (Lab Mentor)**, lab associates **Ms. PrakritiSaha** and **Ms. Parna Banerjee**. The programme was further encouraged and supported by **Prof. Maitree Bhattacharyya**, Director, JBNSTS.

ORGANIZERS: Jagadis Bose National Science Talent Search (Supported by Department of Science and Technology and Biotechnology, Government of West Bengal).

TARGET PARTICIPANTS: Semester III students of the Department of Microbiology (First 7 students according to their university marks were selected).



8	Sayak Maity
9	Harshita Upadhyay
10	Sayak Biswas
11	Adrija Bhattacharjee
12	Srijani Chakraborty
13	Dipayan Ray
14	Soumyadeep Das

ATTENDANCE SHEET:

BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

A three-day Hands-on Biotechnology Skill Development Workshop for undergraduate students was conducted at **JBNSTS** from **7th to 9th January**. The workshop was designed to provide practical exposure to modern biotechnology and related techniques through intensive laboratory sessions, expert lectures, and group-based learning activities. The programme ran daily from 9:30 a.m. to 6:30 p.m. and included academic sessions along with meals and refreshments.

- **Workshop Structure and Activities**

Team Formation : Seven students from different departments were divided into mixed interdisciplinary groups to promote collaboration and teamwork across academic backgrounds.

Day 1: Introduction and Basic Molecular & Microbial Techniques

The programme began with an inaugural session introducing participants to the institute, mentors, and workshop objectives.

Laboratory sessions included:

- DNA Extraction from different biological samples (human and bacterial)
- Antibiotic Sensitivity Testing using the Kirby–Bauer method, with results incubated for observation on the following day.
- Post-lunch, a guest lecture was delivered by **Dr. Abhrajyoti Ghosh** (Associate Professor, Biological Sciences, Bose Institute, Kolkata) focusing on opportunities and developments in microbiology and biotechnology.

Day 2: Advanced Molecular Biology Techniques

Participants gained hands-on experience in:

- cDNA synthesis from RNA samples..
- Reverse Transcription PCR (RT-PCR).
- PCR amplification of target genes.
- Agarose Gel Electrophoresis.

- Fluorescence microscopy using fluorescent dyes.
- Observation and analysis of Antibiotic Sensitivity Test results.

Day 3: Bioinformatics and Presentation

The final day focused on computational biology and scientific communication:

- Introduction to DNA and Protein Data Bank.
- Hands-on session on retrieving biological data and constructing a phylogenetic tree.
- Group PowerPoint presentations summarizing experimental understanding.
- Report submission, feedback session, and certificate distribution.

The workshop was enriched by the organizing team's support and hospitality, creating a positive learning environment. It emphasized hands-on learning, interdisciplinary teamwork, and exposure to experimental and computational biotechnology, effectively bridging theory with practical lab skills despite its short duration.

EXPECTED OUTCOME: The workshop is expected to:

- Strengthen participant's practical laboratory skills in molecular biology and microbiology.
- Enhance understanding of the workflow of research laboratories.
- Introduce students to Bioinformatics tools and scientific data analysis.
- Improve teamwork, scientific communication, and presentation skills.

The supportive mentorship, structured training, and practical exposure made the programme highly beneficial for undergraduate students aspiring to pursue research careers.

PHOTOGRAPHS:

**Group
with
team at**



**photograph of participants
mentors and organizing
JBNSTS**