ASUTOSH COLLEGE
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A REPORT ON ONE DAY INDUSTRIAL VISIT TO NITROFIX LABORATORIES BANSDRONI, KOLKATA

THEME OF THE EVENT: As part of the academic curriculum, the Semester V students of the Microbiology Department at Asutosh College embarked on an industrial visit to Nitrofix Laboratories, Bansdroni, Kolkata. The theme of the industrial visit was to provide practical exposure to undergraduate Microbiology students on the large-scale production and application of biofertilizers. The visit focused on understanding eco-friendly agricultural practices through microbial inoculants produced by Nitrofix Laboratories.

ACADEMIC SESSION: 2025-2026

DATE: 09 Jan 2026

VENUE: Nitrofix Laboratories, Bansdroni, Kolkata

OBJECTIVE/ PURPOSE: The primary objective of the industrial visit was to bridge the gap between theoretical knowledge and industrial application of microbiology. The visit aimed to familiarize students with biofertilizer production techniques, quality control measures, microbial strain maintenance, and the role of beneficial microorganisms such as *Azotobacter*, *Rhizobium*, and phosphate-solubilizing *Bacillus* species in sustainable agriculture..

RESOURCE PERSON: Dr. Mrinal Kanti Basu
Founder Scientist
Nitrofix Laboratories

ORGANIZERS: Following Faculties of Dept. of Microbiology, Asutosh College

Dr. Pranab Kumar Das, Assistant Prof.
Dr. Nirmalya Chakraborty, Faculty

TARGET PARTICIPANTS: Semester V students of the Department.

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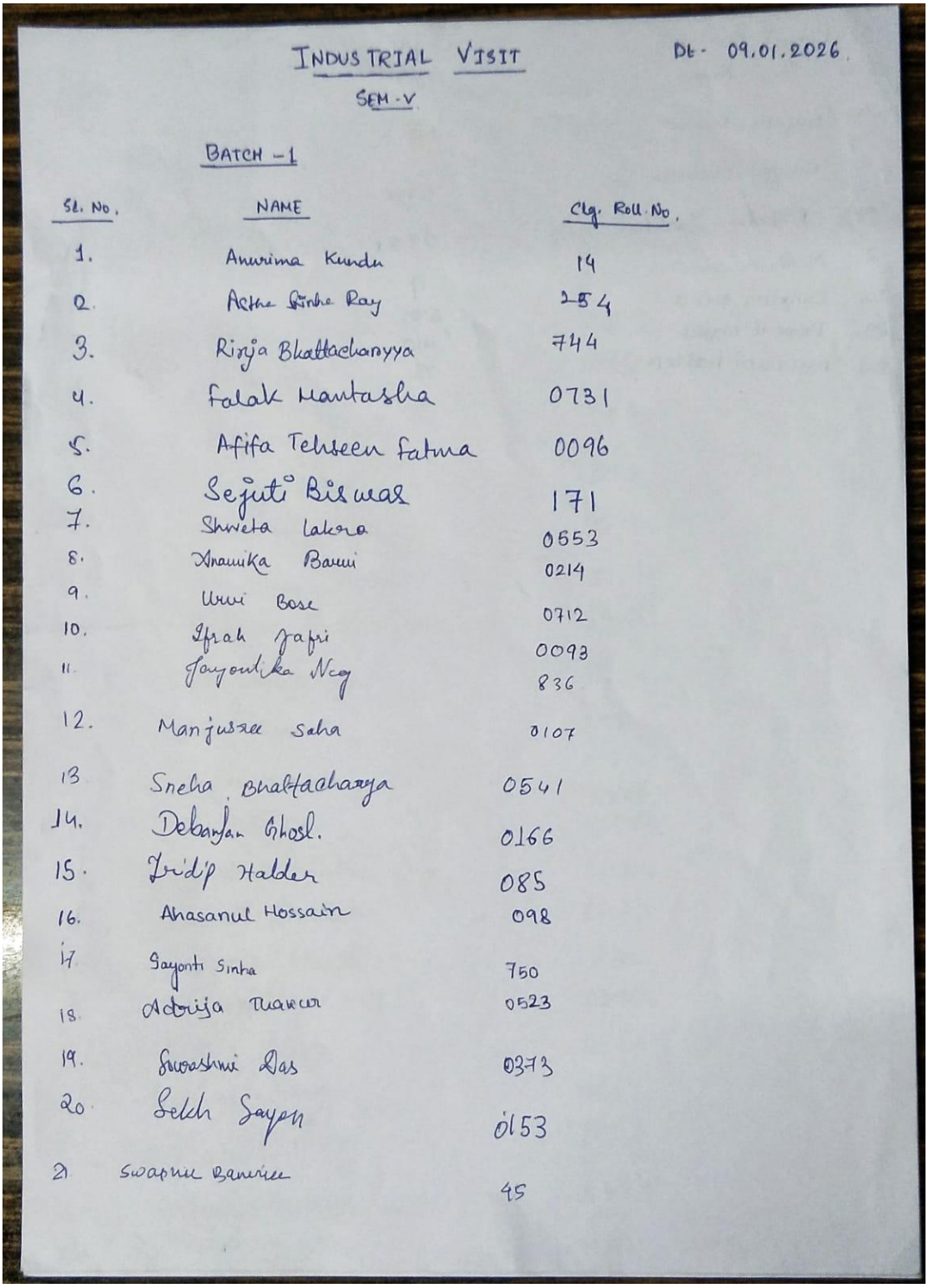
ATTENDANCE SHEET:



INDUSTRIAL VISIT

Dt - 09.01.2026

SEM - V

BATCH - 1

Sl. No.	NAME	Clg. Roll No.
1.	Anurima Kundu	14
2.	Asha Sinha Ray	254
3.	Rinja Bhattacharyya	744
4.	Falak Mantasha	0731
5.	Afifa Tehseen fatma	0096
6.	Sejuti Biswas	171
7.	Shweta Lakra	0553
8.	Anamika Barui	0214
9.	Urvi Bose	0712
10.	Ifrah Jafri	0093
11.	Jayoulika Neg	836
12.	Manjusree Saha	0107
13	Sneha Bhattacharya	0541
14.	Debanjan Ghosl.	0166
15.	Dipdip Halder	085
16.	Ahasanul Hossain	098
17	Sayonti Sinha	750
18	Adrija Thakur	0523
19.	Swashni Das	0373
20	Selch Sayan	0153
21	Swapnil Banerjee	45

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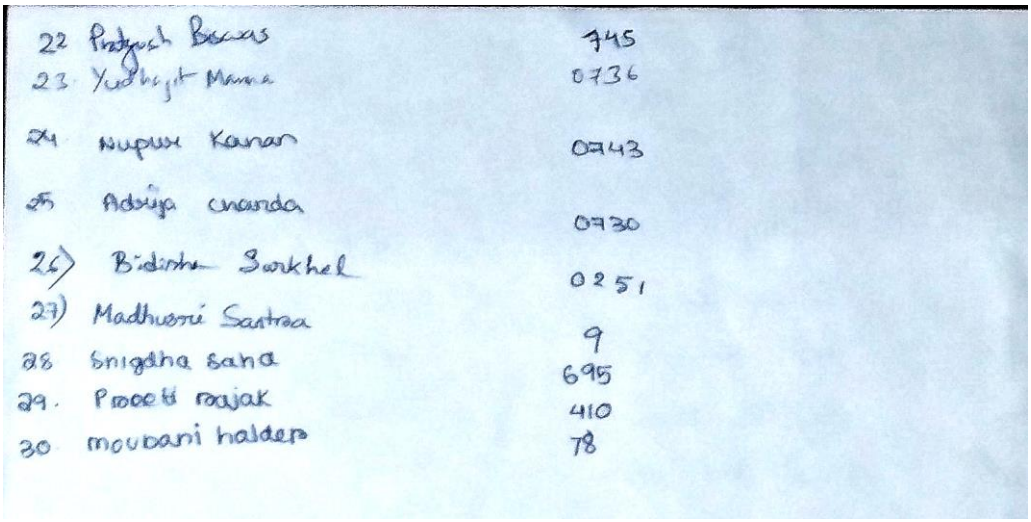
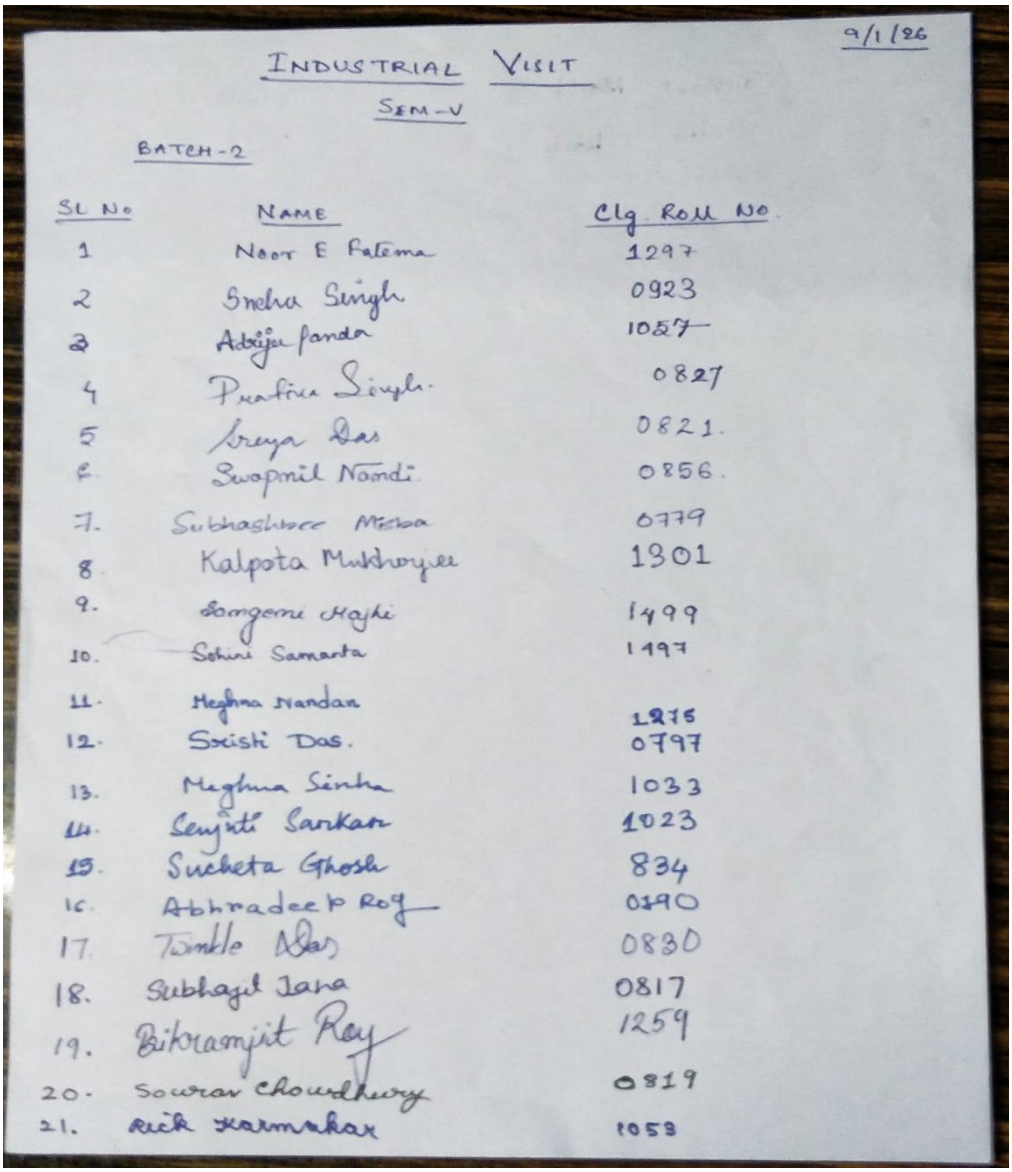


22	Prajyoti Barua	745
23	Yudhajit Manna	0736
24	Nupur Kanar	0743
25	Adrija chanda	0730
26	Bidisha Sarkhel	0251
27	Madhusri Santra	9
28	Snigdha Saha	695
29.	Proceti rajak	410
30	mousani halder	78



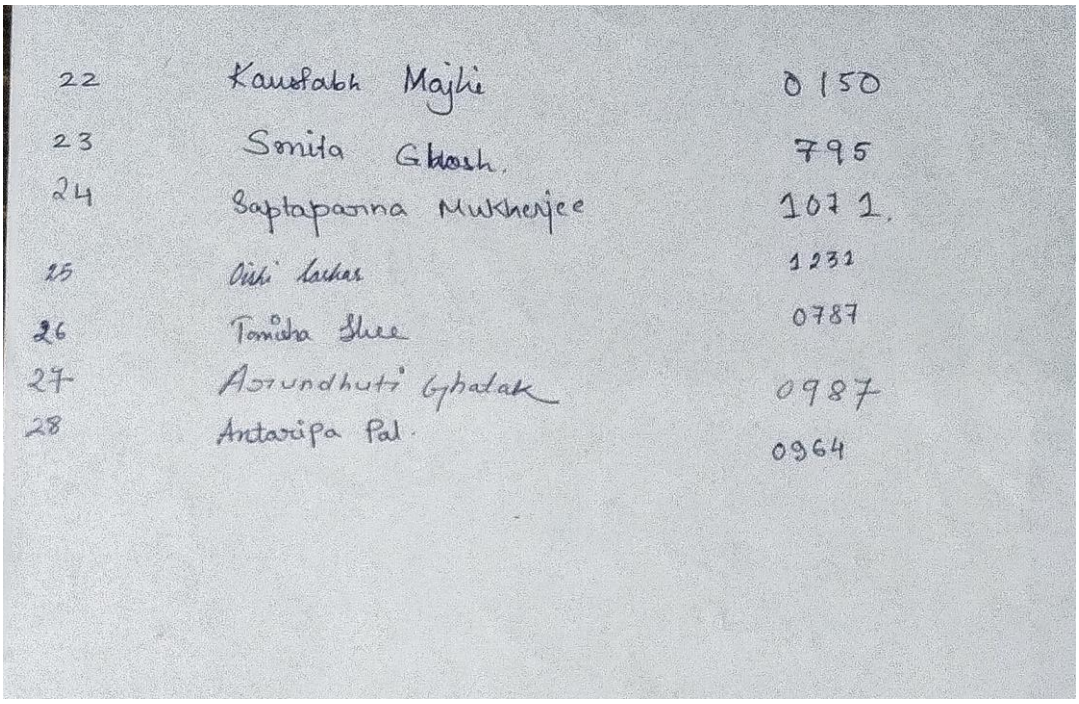
9/1/26

INDUSTRIAL VISIT

SEM-V

BATCH-2

SL No	NAME	Clg. ROLL NO.
1	Noor E Fatema	1297
2	Sneha Singh	0923
3	Adrija panda	1057
4	Pratiti Singh	0827
5	Sreya Das	0821.
6.	Swapnil Nandi	0856.
7.	Subhashree Mishra	0779
8.	Kalpota Mukherjee	1301
9.	Sangeeta Majhi	1499
10.	Sohini Samanta	1197
11.	Meghna Nandan	1275
12.	Srishti Das.	0797
13.	Meghna Sinha	1033
14.	Sanjukta Sarkar	1023
15.	Sucheta Ghosh	834
16.	Abhradeep Roy	0190
17.	Twinkle Das	0830
18.	Subhajit Jana	0817
19.	Bikramjit Roy	1259
20.	Sourav Chowdhury	0819
21.	Rick Karmakar	1053



BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

Nitrofix Laboratories is a well-established biofertilizer production organization. The visit was planned as a part of the academic curriculum to provide students with practical exposure to industrial microbiology and to enhance their understanding of the application of beneficial microorganisms in sustainable agriculture. The industry is known for the production of high-quality biofertilizers marketed under the brand name Azophos and Rhizophos, which includes microbial products such as *Azotobacter*, *Rhizobium*, and phosphate-solubilizing bacteria belonging to the genus *Bacillus*.

Upon arrival at Nitrofix Laboratories, the students were warmly welcomed by the technical and supervisory staff. An introductory session was conducted to familiarize the students with the background of the organization, its vision, and its contribution to eco-friendly agricultural practices. The resource persons explained the growing importance of biofertilizers as an alternative to chemical fertilizers, highlighting their role in maintaining soil fertility, enhancing crop yield, and reducing environmental pollution.

The visit commenced with an overview of the fundamental principles of biofertilizer production. Students were introduced to the concept of beneficial soil microorganisms and their symbiotic and free-living

associations with plants. Detailed explanations were provided on nitrogen-fixing bacteria such as *Azotobacter* and *Rhizobium*, emphasizing their mechanisms of nitrogen fixation and their significance in improving plant growth. Students viewed the bacteria under a phase contrast microscope.

Students were then guided through various sections of the production unit as soil testing laboratory, culture and strain selection laboratory and the production unit. The staff demonstrated the methods of microbial strain selection and maintenance, emphasizing the importance of using efficient and viable strains for commercial production. The procedures involved in mass multiplication of microorganisms were explained, including preparation of culture media, sterilization techniques, and inoculation methods. Special emphasis was given to aseptic conditions maintained throughout the process to prevent contamination and ensure product quality.

The fermentation process was explained in detail, where students learned about the use of fermenters for large-scale microbial growth. Parameters such as temperature, pH, aeration, and incubation period were discussed, helping students relate theoretical concepts learned in classrooms to real industrial practices. The students observed how optimal growth conditions are maintained to achieve high microbial count and effectiveness of the final product.

Another important aspect covered during the visit was the preparation of carrier materials used in biofertilizer formulations. The staff explained the characteristics of an ideal carrier - fly ash, such as moisture-holding capacity, non-toxicity, and compatibility with microbial cultures. Students were shown how microbial cultures are mixed with carrier materials to produce solid and liquid biofertilizers under the brand name Azophos & Rhizophos.

The packaging and labeling section was also demonstrated, where students learned about proper packing techniques, labeling requirements, and storage conditions necessary to maintain the shelf life and efficacy of biofertilizers. The importance of following government regulations and quality standards prescribed for biofertilizer production was emphasized. The staff also explained the quality control measures adopted by the industry, including microbial count analysis and contamination checks, to ensure the reliability of the products supplied to farmers.

A PPT presentation and interactive session was conducted at the end of the visit, during which students actively participated by asking questions related to biofertilizer application methods, dosage, storage, and field-level challenges. The industry experts shared their experiences and provided insights into career opportunities in biofertilizer industries, agricultural microbiology, and research sectors. They also encouraged students to pursue higher studies and research in applied microbiology to contribute to sustainable agricultural development.

Overall, the industrial visit proved to be an enriching and informative experience for the students. It successfully connected theoretical knowledge with practical industrial applications and provided a clear understanding of how microbiological principles are utilized in real-world agricultural practices. The visit helped students develop a broader perspective on the role of microbiology in environmental sustainability and rural development, making the programme highly beneficial and educational.

EXPECTED OUTCOME: The industrial visit enhanced students' understanding of applied microbiology in the agricultural sector. It helped students gain first hand knowledge of biofertilizer production, microbial applications, and industrial work culture. The visit is expected to motivate students toward research and careers in biofertilizer industries, environmental microbiology, and sustainable agriculture, while strengthening their practical and analytical skills.

GEO-TAGGED PHOTOGRAPHS:

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