



A REPORT ON ONE DAY VISIT TO SURAKSHA DIAGNOSTIC PVT LTD RAJARHAT, KOLKATA

- THEME OF THE EVENT:** Semester V students of Department of Microbiology, Asutosh College along with faculty members visited the Corporate office of Suraksha Diagnostic Pvt. Ltd., Rajarhat, Kolkata. This visit was mainly focused to understand the various routine tests as well as Molecular Biology techniques that are employed in a diagnostic lab. This industrial visit is a part of their curriculum.
- ACADEMIC SESSION:** 2023-2024
- DATE:** 18th and 19th December 2023
- VENUE:** Suraksha Diagnostic Pvt. Ltd., New Town, Rajarhat, Kolkata
- OBJECTIVE/ PURPOSE:** To inculcate among students zeal of practical knowledge and bridge the gap between theoretical knowledge and it's practical application in industries.
- RESOURCE PERSON:** Dr. Samiddha Banerjee,
Scientist, Research and Development,
Corporate Office and Central lab,
Suraksha Diagnostic Pvt. Ltd.
- ORGANIZERS:** Following Faculties of Dept. of Microbiology, Asutosh College

Dr. Kuntal Kanti Goswami, Assistant Prof. & HOD
Dr. Pranab Kumar Das, Assistant Prof.
Dr. Gajendra Nath Maity, Assistant Prof.
Mrs. Parbati Nag, Faculty
Dr. Sankar Chandra Basu, Assistant Prof.
- TARGET PARTICIPANTS:** Semester V students of the Department.
Batch I on 18th December 2023
Batch II on 19th December 2023



ATTENDANCE SHEET:

INDUSTRIAL VISIT 2023
Semester - V
Batch - I
Date - 18.12.2023

Signature of Teachers

- 1) Kuntal Kanti Goswami
- 2) Parbatee Nag
- 3) Pranab Kumar Das

Signature of students

1) Ritipriya Ghosh	20) Rohini Barman Das
2) Pujali Bhan	21) Souvik Datta
3) Anpita Das	22) Jinal Jais
4) Shruya Ghose	23) Sambit Sanyal
5) Sudipto Saha	24) Taha Wajid
6) Bidhyabati Banik	25) Ankan Sarkar
7) Sneha Das	26) Chaiti Saha
8) Puity Chakraborty	27) Ashmita Nag
9) Swati Maheswari	28) Somtomu Saha
10) Swati Kundu	29) Ankit Das
11) Bristi Saha	30) Sujay Nayak
12) Ankita Paul	31) Gauri Banerjee
13) Swastika Ganguly	32) Rishov Banerjee
14) Renesa Das	
15) Samadrita Sarkar	
16) Koushiki Basak	
17) Priyanka Ghosh	
18) Ishani Datta	
19) Fareeha Inam	

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Batch - II
Date - 19.12.2023

Signature of Teachers

- 1) Pranab Kumar Das
- 2) Gajendra Nath Maity
- 3) Sankar Chandra Bhattacharya
- 4)

Signature of Students

1) Ayan Sikari	21) Sarthak Shaha
2) Soumi Chakraborty	22) Kaustubh Das
3) Sudipta Saha	23) Anesh Madecem
4) Monalisa Majhi	24) Debnanu Roy
5) Anishi Sen	25) Sarinor Hosen Mandal
6) Anushka Gayen	26) Ashmi Jey
7) Adarja Pal	27) Chirri Gupta Roy
8) Ankit Paul	28)
9) Khushi Verma	29)
10) Pratyusha Das	30)
11) Shikini Saha	
12) Pindila Sengupta	
13) Sayandip Chakraborty	
14) Suti Bhakat	
15) Rik Roy	
16) Eshika Ghosh	
17) Debargha Das	
18) Debargha Bhunia	
19) Dipanwita Sarangi	
20) Abhis Bara	



BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

The various departments of the Diagnostic Centre are:-

1. Histopathology:

In this lab the cells and tissues are examined to understand the nature of the disease. The following activities typically found in the lab are:

- **Gross Station** – Here the samples of tissues and cells from different diagnostic centers are brought and properly preserved.
- **Tissue Embedding Processing Room** – The collected tissue are processed here by applying formalin, graded alcohol, xylene and finally the tissues are embedded in paraffin wax in the shape of a block.
- **Microtome** – The paraffin blocks were put into a microtome to cut it in thin sections ranging from 2-20 μ m which makes them suitable to visualize under a microscope.
- **Staining** – The thin sections were properly stained with eosin to impart a pinkish colour to the cytoplasm, the cells were stained with haematoxyline to give a bluish tint to the nucleus. After staining the thin sections of the tissues were properly visualized under a microscope.

2. Microbiology:

This department mainly focuses on the study and analysis of microorganisms including bacteria, virus, fungi and parasites. The various sections of this department were as follows:

- **Laminar Air Flow**– here BSL-3 standardized laminar are used to test bacterial culture, viral culture and to test cultures for their antibiotic sensitivity.
- **Serology** – In this section the study of blood serum is done which focuses on the presence of antibodies, antigens, and other substances. Mainly ELISA tests are done here to test for dengue, typhoid, etc.
- **Molecular Genetics** – In this department karyotyping, FISH are employed to identify any chromosomal defect either numerically

or structurally. Here the cells are cultured in CO₂ incubator, properly harvested and dropping is done for final staining.

- **NGS (Next Generation Sequencer)** - It is mainly used to check for BRCA (Breast cancer) gene which detects the probability of any inherited disease. It takes almost 12 days to obtain results.

3. Biochemistry:

This department mainly focuses on studying the chemical processes and substances that occur within living organisms. Here fully automated analyzers and sophisticated instruments were used to produce throughput result, and the biochemists and clinical scientists analyze this particular result to provide interpretations to healthcare providers.

The following parameters are analyzed –

- **Enzyme Assay** – It is conducted to measure the activity of specific enzymes in biological samples. Abnormal enzyme levels can be indicative of certain diseases.
- **Hormone Analysis**- The hormones analyzed include thyroid hormones, insulin, cortisol, and sex hormones.
- **Metabolite Analysis** - The analysis of metabolites, such as glucose, cholesterol, and triglycerides, provides valuable information about an individual's metabolic health and risk factors for cardiovascular diseases were mainly done here.
- **Protein Analysis** -Protein assays are performed to assess the levels of specific proteins in the blood or other samples.

4. Haematology:

This department mainly focuses on the study and analysis of blood and blood related disorders. The following activities are observed in this department

- **Complete Blood Count (CBC)** – This standard test provides information about the number and type of different blood cells.
- **Blood smear examination** – This test is mainly done to check the blood cell morphology.
- **Genetic Testing** – This test is also done to check for probable sickle cell anemia, thalassemia and certain types of leukemia.
- **Flow Cytometry** – This apparatus is utilized to analyze the physical and chemical characteristics of a particular cell in blood.

EXPECTED OUTCOME:

- This industrial visit immensely helped the students to Bridge the gap between theoretical knowledge and its practical application in industries.
- Gain knowledge about tissue sectioning in a histopathological lab.
- The use of microbiology in diagnostic centre.
- Gather information about the biochemistry tests in diagnosis.
- Get acquainted with many sophisticated mol-bio instruments as Multi Plex PCR, Next Generation Sequencer, Karyotyping tools & software, microtome machine, automated analyzer machine, flow cytometer, etc.

➤ **GEO-TAGGED PHOTOGRAPHS:**



Batch I Students with Teachers



Felicitation of Resource Person



Batch II Students with Teachers