# DEPARTMENT OF BOTANY
# CITY COLLEGE

# REPORT ON LONG EXCURSION:
# DARJEELING AND ITS ADJOINING AREAS
# (Eg. DOOARS, LAVA AND KALIMPONG)

**Date of visit : 15.11.2022 to 21.11.2022**
**Place :** Darjeeling and its adjoining areas (eg. Dooars, Lava and Kalimpong)
**Paper :** Botany Hons. Semester-V and Semester-III [Paper: CC7]
**Participants :** Botany Hons. Semester-V and Semester-III.

| Sl. No. | Name of the Student | Status | Gender | Age (in years) |
|---|---|---|---|---|
| 1. | ROHIT DAS | Semester III Bot (H) | Male | 20 |
| 2. | AHANA CHANDRA | Semester III Bot (H) | FEMALE | 21 |
| 3. | PRATEEK TIWARI | Semester III Bot (H) | MALE | 19 |
| 4. | DEVAKASH KAR | Semester III Bot (H) | MALE | 19 |
| 5. | DEVANSH KAR | Semester III Bot (H) | MALE | 19 |
| 6. | DEEPBENDU KAR | Semester III Bot (H) | MALE | 19 |
| 7. | MUKTI SINGH | Semester III Bot (H) | FEMALE | 19 |
| 8. | DISHA HALDAR | Semester V Bot (H) | FEMALE | 19 |
| 9. | RITUPARNA BHAR | Semester V Bot (H) | FEMALE | 19 |
| 10. | TRISHA NANDY | Semester V Bot (H) | FEMALE | 20 |
| 11. | TRISHA GHOSH | Semester V Bot (H) | FEMALE | 20 |
| 12. | ARGHYA KANUNGO | Semester V Bot (H) | MALE | 22 |
| 13. | KRISHNENDU DASGUPTA | Semester V Bot (H) | MALE | 20 |
| **Name of Teachers** | | | | |
| 14. | Dr. ARKAJO MAJUMDAR | Assistant Professor | Male | 32 |
| 15. | Dr. PARTHA KARAK | Assistant Professor | Male | 34 |
| **Name of NTS** | | | | |
| 16. | MR. ASHOK PANDA | NTS | Male | 55 |

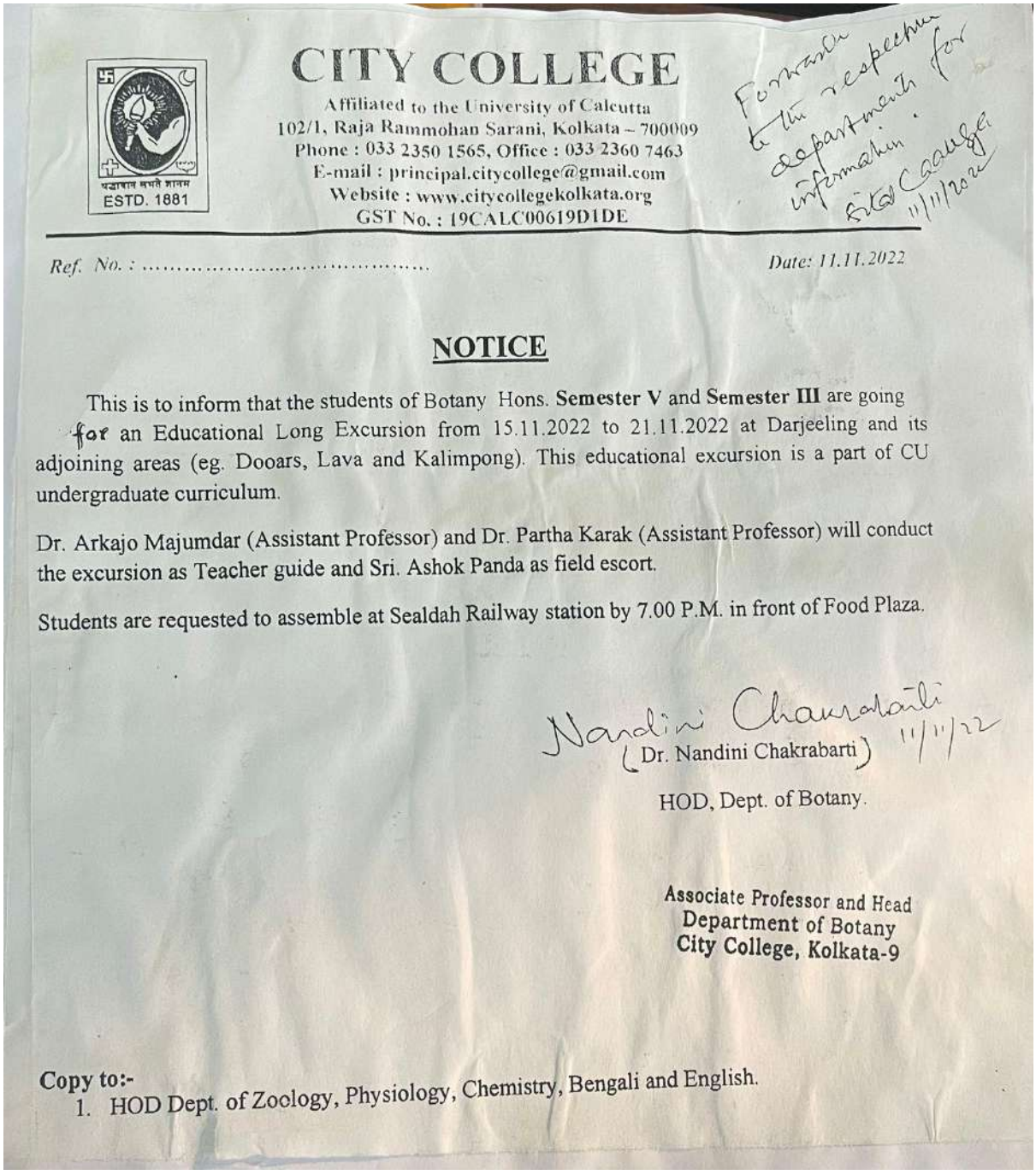
**Report**

This Educational Long Excursion was conducted from 15.11.2022 to 21.11.2022 with 13 students of Botany Hons. Semester-V and Semester-III at Darjeeling and its adjoining areas (eg. Dooars, Lava and Kalimpong). This educational excursion is a part of Calcutta University undergraduate curriculum.

Along with students Dr. Arkajo Majumdar (Assistant Professor) and Dr. Partha Karak (Assistant Professor) conducted the excursion as Teacher guide and Sri. Ashok Panda (NTS) as field escort.

Students have studied rich flora of Darjeeling which is a part of the Eastern Himalayan zoo-geographic zone and they also visited adjoining areas like Jalpaiguri, Kalimpong etc. Visit to Neora Valley National Park, The Lloyd's Botanical Garden and Gorumara National Park have a great importance for Botanical students.

**Notice:**



# CITY COLLEGE

Affiliated to the University of Calcutta
102/1, Raja Rammohan Sarani, Kolkata – 700009
Phone : 033 2350 1565, Office : 033 2360 7463
E-mail : principal.citycollege@gmail.com
Website : www.citycollegekolkata.org
GST No. : 19CALC00619D1DE

ESTD. 1881

Forwarded to the respective department for information.
11/11/2022

*Ref. No. : .....* *Date: 11.11.2022*

## NOTICE

This is to inform that the students of Botany Hons. **Semester V** and **Semester III** are going for an Educational Long Excursion from 15.11.2022 to 21.11.2022 at Darjeeling and its adjoining areas (eg. Dooars, Lava and Kalimpong). This educational excursion is a part of CU undergraduate curriculum.

Dr. Arkajo Majumdar (Assistant Professor) and Dr. Partha Karak (Assistant Professor) will conduct the excursion as Teacher guide and Sri. Ashok Panda as field escort.

Students are requested to assemble at Sealdah Railway station by 7.00 P.M. in front of Food Plaza.

Nandini Chakrabarti 11/11/22
(Dr. Nandini Chakrabarti)
HOD, Dept. of Botany.

Associate Professor and Head
Department of Botany
City College, Kolkata-9

**Copy to:-**
1. HOD Dept. of Zoology, Physiology, Chemistry, Bengali and English.

**6.** Diagnostic features, Systematic position (Bentham & Hooker and Cronquist), Economically important plants (parts used and uses) of the following families:

6.1. Monocotyledons: Alismataceae, Gramineae (Poaceae), Cyperaceae, Palmae (Arecaceae), Liliaceae, Musaceae, Zingiberaceae, Cannaceae, Orchidaceae.

6.2. Dicotyledons: Nymphaeaceae, Magnoliaceae, Leguminosae (subfamilies), Polygonaceae, Euphorbiaceae, Malvaceae, Umbelliferae (Apiaceae), Labiatae (Lamiaceae), Solanaceae, Scrophulariaceae, Acanthaceae, Rubiaceae, Cucurbitaceae, Compositae (Asteraceae).

.....12 lectures

**PRACTICAL- PLANT SYSTEMATICS (BOT-A-CC-3-7-P)**
**(Credits 2)**

1.Workout on Angiosperms

2. Spot Identification

3.Classroom performance: (Lab records)

4. Field Records (Field note book, Herbarium specimens)

5. Viva

**ANGIOSPERMS**

**1.** Work out, description, preparation of floral formula and floral diagram, identification up to genus with the help of suitable literature of wild plants and systematic position according to Benthum Hooker system of classification from the following families: Malvaceae, Fabaceae (Papilionaceae), Solanaceae, Scrophulariaceae, Acanthaceae, Labiatae (Lamiaceae), Rubiaceae.

**2.** Spot identification (Binomial, Family) of common wild plants from families included in the theoretical syllabus (list to be provided).

**FIELD WORK**

At least three excursions including one excursion to Acharya Jagadish Chandra Bose Indian Botanic Garden (Shibpur, Howrah) and Central National Herbarium (CNH).

**FIELD RECORDS**

**1.** Field Note Book (authenticated) with field notes on the plants of the area of excursion and





voucher specimen book.

**2.** Herbarium specimen: Preparation of 25 angiospermic specimens (identified with author citation, voucher number and arranged following Bentham & Hooker's system of classification) to be submitted during examination.

**CLASSROOM PERFORMANCE**

Same as above.

**SEMESTER IV**
**CORE COURSE-8**
**PLANT GEOGRAPHY, ECOLOGY AND EVOLUTION (BOT-A-CC-4-8-TH)**
**THEORETICAL**
**(Credits 4, Lectures 60)**

**PLANT GEOGRAPHY**

**1. Phytogeographical regions:**
1.1. Phytogeographical regions of India (Chatterjee 1960); 1.2. Dominant flora of Eastern Himalaya, Western Himalaya and Sunderban.

.....8 lectures

**2. Endemism:**
2.1 Endemic types and Factors; 2.2. Age & Area hypothesis and Epibiotic theory; 2.3. Endemism in Indian flora.

.....6 lectures

**ECOLOGY**

**1. Preliminary idea on:**
1.1. Habitat and Niche, 1.2. Ecotone and edge–effect, 1.3. Microclimate, 1.4. Ecads, ecotype and ecoclines, 1.5. Carrying capacity.

.....4 lectures

**2. Community ecology:**

2.1. Community- Characteristics and diversity, 2.2. Ecological succession –Primary and secondary, Seral stages (with reference to Hydrosere), autogenic and allogenic succession.

.....6 lectures

3.1. Plant indicators (metallophytes); 3.2. Phytoremediation.

.....4 lectures

**4. Conservation of Biodiversity:**

4.1. Level of Biodiversity: genetic, species & ecosystem diversity, 4.2. Biodiversity hot spots- criteria,

3. The art of imaging of samples through photomicrography and field photography
4. Poster/ power point presentation on defined topics
5. Technical writing on topics assigned.

**Natural resource management (BOT-A-DSE-B-6-8-TH)**
**THEORETICAL**
**(Credits 4, Lectures 60)**

**Unit 1: Natural resources**
Definition and types.
..... 2 lectures

**Unit 2: Sustainable utilization**
Concept, approaches (economic, ecological and socio-cultural).
..... 8 lectures

**Unit 3: Land**
Utilization (agricultural, pastoral, horticultural, silvicultural); Soil degradation and management.
..... 8 lectures

**Unit 4: Water**
Fresh water (rivers, lakes, groundwater, aquifers, watershed); Marine; Estuarine; Wetlands; Threats and management strategies.
..... 8 lectures

**Unit 5: Biological Resources**
Biodiversity-definition and types; Significance; Threats; Management strategies; Bioprospecting; IPR; CBD; National Biodiversity Action Plan).
..... 12 lectures

**Unit 6: Forests**
Definition, Cover and its significance (with special reference to India); Major and minor Forest products; Depletion; Management.
..... 6 lectures

**Unit 7: Energy**
Renewable and non-renewable sources of energy.
..... 6 lectures

**Unit 8: Contemporary practices in resource management**
EIA, GIS, Participatory Resource Appraisal, Ecological Footprint with emphasis on carbon footprint, Resource Accounting; Waste management.
..... 8 lectures

**Unit 9: National and international efforts in resource management and conservation**
..... 4 lectures



**PRACTICAL- Natural resource management (BOT-A-DSE-B-6-8-P)**
**(Credits 2)**

1. Estimation of solid waste generated by a domestic system (biodegradable and non-biodegradable) and its impact on land degradation.
2. Estimation of foliar dust deposition.
3. Determination of total solid in water (TDS)
4. Determination of chemical properties of soil by rapid spot test (carbonate, iron, nitrate)
5. Estimation of organic carbon percentage present in soil sample.
6. Collection of data on forest cover of specific area.

**Photo:**

Group photo at The Lloyd's Botanical Garden, Darjeeling