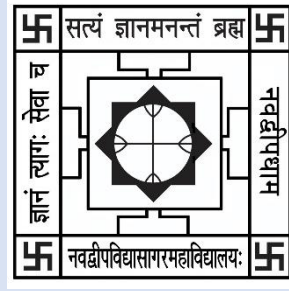


Nabadwip Vidyasagar College



CRITERION-1

1.3.2: Percentage of students undertaking project work/field work/ internships

2021-2022

STUDENT LIST OF EXCURSION TO SANTINIKETAN

| SL NO. | GIRLS | BOYS |
|--------|---------------------------|-----------------------|
| | | SEM-2 |
| ✓ 1. | RIDDHA SAHA | |
| ✓ 2. | NABAMITA DAS | |
| ✓ 3. | KHUSHBU MONDAL KHUSHBU | |
| ✓ 4. | ANTARA KARMAKAR | |
| | | SEM-4 |
| ✓ 5. | MAHEK SULTANA | |
| ✓ 6. | NUPUR GHOSH | |
| ✓ 7. | MOUMI BISWAS | |
| ✓ 8. | DEBAPRIYA GHOSH | |
| ✓ 9. | RUMKI MONDAL | |
| ✓ 10. | RUMKI CHOUDHURY CHOWDHURY | |
| ✓ 11. | BAIDANTI CHOUDHURY | |
| ✓ 12. | KRISHNA ABATAR | |
| ✓ 13. | PALLABI MONDAL | |
| ✓ 14. | | SUBHA MONDAL |
| ✓ 15. | | RAJESH TALUKDAR |
| ✓ 16. | | PADMANAVA CHAKRABORTY |
| ✓ 17. | | BHASKAR BHATTACHARYA |
| | | SEM-6 |
| ✓ 18. | ISHITA CHOUDHURY | |
| ✓ 19. | UMA DEY | |
| ✓ 20. | SAMPRETI BISWAS | |

15/06/2022
 Cashier
 Acharya Vidyasagar College
 Bahadurp, Nadia-741000

➤ **Acknowledgement:** I would like to thank Nabadwip Vidyasagar college, Zoology Department to give us as opportunity to have a memorable excursion.

I am thankful towards Dr.Madhuban Dutta ma'am (H.O.D of Zoology Department), Dr.Nirmalya Das sir, Aniket Biswas sir, Chandrima Majumdar ma'am for kindly guiding us towards educational tour at Shantiniketan and surroundings from 25.6.22 to 26.06.22.

I have gained a fast hand knowledge regarding the In-situ conservation methods at Ballavpur Wildlife Sanctuary near Shantiniketan for which I will remain grateful towards my teachers.

➤ **Introduction:** Excursion is stair towards enhancement of our knowledge about and our nature. The term is derived from Latin word 'excuro' which means 'to run out'. From childhood till now our knowledge get confined in the pages of book. Excursion helps us to fly in nature, accumulate practical knowledge and strong our theoretical knowledge. Zoology is the scientific study of animals, including how they behave, reproduce, evolve, and interact with other species and their environment. By understanding how animal work, we must have to go field & observe them. To enter a zoological scientific community a student have to learn how the classical way of the subject works. College excursion is a little step

towards this. It give us a lot of learn, thought & many more eg; Socialization, Exposure, Curiosity. Actually an educational tour is how much beneficial to a student can't measure. Here I want to notify some point about this-

- 1) New sights – Students may have the opportunity to observe many things that are not available at college. They introduced to the real world of their subject.
- 2) Bonding – Getting away from the everyday atmosphere of the classroom gives students an opportunity to spend time with each other in a new environment & make an unbreakable bonding. It also gives us classroom supplement, informal learning environment, break from the routine, creates an interest in subjective professions, real-world experience, connection to community.

➤ **About Shantiniketan** : Shantiniketan was a dream of Maharshi Devendranath Tagore that was a later on nurtured and practically constructed by his worthy son Gurudev Rabindranath Tagore, the world-famous poet, author, dramatist and artist of 20th century Bengal. The very word “Shantiniketan” means the “the above of peace”. Indeed the place is. Located in the north-central region of West Bengal under Birbhum district, Bolpur- Shantiniketan is the perfect place to find the self because of the serenity and absolute peace.

The tranquil nature and the mesmerizing ambience of the red soil region can be the ultimate destination for those who are looking forward to escape from the city hustles and bustles. Bolpur forms itself with Shantiniketan, Sriniketan and Prantik. The famous Vishva-Bharati University, the open air schools of Shantiniketan created by Tagore and the famous handicraft industries are the most interesting things to explore here.

➤ **Name of the students & teachers who join our tour/team:**

- **Teachers:** Dr. Madhuban Dutta
Dr. Nirmalya Das
Chandrima Majumdar
Aniket Biswas
- **Students:**
Mahek Sultana
Krishna Abatar
Pallabi Mondal
Debapriya Ghosh
Rumki Mondal
Moumi Biswas
Baidanti Choudhury
Rumki Choudhury
Rajesh Talukdar

Bhaskar Bhattacharya
Padmanav Chakrabarty
Subha Mondal
Uma Dey
Ishita Choudhury
Sampriti Biswas
Nabamita Das
Riddha Saha
Khusbu Mandal
Antara Adhikary

➤ **Tour Diary:** We started our journey on 25th June, 2020 from our college Nabadwip Vidyasagar College.

- 25.06.22- Left Nabadwip at around 7.30 am for Shantiniketan by a bus.

At 11.30 am we reached Shantiniketan and at first we visited 'Rabindra Bhavan', then from there we directly went to our hotel 'Amarkutir Society for Rural Development'.

After having our lunch there, we visited one renowned market of Shantiniketan called 'Sonajhurir Haat' at 4 pm and returned at 7.00 pm.

- 26.06.22- After breakfast we visited 'Ballavpur Wildlife Sanctuary' at 11.00 am. In the sanctuary we saw 'Cheethal' also known as Spotted Deer.

At around 12.30 pm we went back to our hotel and had our lunch.

After lunch we left our hotel and went to 'Srijani Shilpagram'.

We started our journey back to Nabadwip at 4.00 pm on the same day.

PITFALL TRAP METHOD

DEFINITION:

A pitfall trap is a simple device used to catch small animals - particularly insects and other invertebrates - that spend most of their time on the ground. In its most basic form, it consists of a container buried so that its top is level with the surface of the ground. Any creatures that wander nearby may fall in.

Sometimes alcohol or another substance is poured in to the trap so that any insects falling in are killed.

LOCATION & TIME OF WORK:

On that evening when we reached there (25/06/2022), we arranged few plastic cups, alcohol and a trowel. At first, we selected an area near our hotel premises. Thereafter we dug a number of holes with the help of trowel and then placed the cups inside it so that the lip of the beaker is level with the ground surface. Then we poured a little amount of alcohol inside the cups and leave it overnight.

On the next day afternoon, (26/06/2022) after visiting some places we reached our hotel and collected all the cups. After that we empty the cups and did the observation of species collected.

WEATHER CONDITION:

The temperature was around 28°-32°C with little rain.

COLLECTED SPECIES:

After observation, we found some insect species. We preserved them and brought them at our college and tried to make an identification with the help of our teachers. We found total 5 species.

| CLASS | ORDER | SCIENTIFIC NAME |
|---------|--------------|--------------------------------|
| Insecta | Thysanoptera | <i>Thrips sp</i> |
| Insecta | Hemiptera | <i>Atta</i> |
| Insecta | Orthoptera | <i>Xenogryllus marmoratus</i> |
| Insecta | Hymenoptera | <i>Meteorus rubens</i> |
| Insecta | Coleoptera | <i>Chrysolina quadrigemina</i> |



Thrips sp



Atta



Xenogryllus marmoratus



Meteorus rubens



Chrysolina quadrigemina

➤ **Places visited:**

- **Ballavpur Wildlife Sanctuary:** Ballavpur Wildlife Sanctuary, also known as Deer Park, protected wildlife reserve located approximately 97 kms from Asansol. Established in 1977, this ecosystem houses various species of deer like spotted deer, white tailed deer and other animals like black buck, etc.

Ballavpur Wildlife Sanctuary is located near Shantiniketan in Bolpur subdivision of Birbhum District of West Bengal. The sanctuary is spread over an area of 200 hectares and offers spellbound beauty of nature. The lush wildlife sanctuary is home to three large Jheels which becomes a home to migratory as well as resident birds. The sanctuary has one of the most successful deer conservation record in West Bengal. It hosts many species of animals like Cheethals (Spotted Deer), Black Bucks, Jackals and foxes. The sanctuary is very well guarded by watch tower and patrol teams is often seeing patrolling

the area. There is a well defined path throughout the area for the tourists.

OBSERVATION ON BALLAVPUR WILDLIFE SANCTUARY:

1. On Plant Species:

Morinda tinctoria, commonly known as Indian Mulberry in the Family – Rubiaceae.



2. On Animal species:

Axis axis, commonly known as **Chital deer** or spotted deer native to the Indian subcontinent. The male chital has branching, usually three-tined antlers up to 100 cm long.



3. On Biodiversity:

This Wildlife Sanctuary is home to three large water bodies (Jheel) which hosts migratory as well as resident birds in plenty. Many plant species are also present.



1st YEAR FEMALE

| NAME | AGE | GENDER | 1 st TERM | 2 nd TERM | 3 rd TERM |
|-----------------|-----|--------|----------------------|----------------------|----------------------|
| Uma Dey | 17 | FEMALE | PAID | PAID(3100) | PAID |
| DebshreeRatna | 18 | FEMALE | PAID | PAID | PAID |
| Sneha Pal | 18 | FEMALE | PAID (1000) | PAID(2000) | |
| Rani Khatun | 18 | FEMALE | | | |
| PrithaPramanick | 18 | FEMALE | PAID | PAID | PAID |

2nd YEAR MALE

| NAME | AGE | GENDER | 1 st TERM | 2 nd TERM | 3 rd TERM |
|----------------------|-----|--------|----------------------|----------------------|----------------------|
| Manabendra Sarkar | 19 | MALE | PAID | PAID | PAID |
| ArindamDebnath | 19 | MALE | PAID | PAID | PAID |
| SayanDebnath | 19 | MALE | PAID | PAID | PAID |
| HrikMajumder | 19 | MALE | PAID (1000) | PAID(3000) | PAID |
| Arnab Chakraborty | 19 | MALE | PAID | PAID | PAID |

1st YEAR MALE

| NAME | AGE | GENDER | 1 st TERM | 2nd TERM | 3 rd TERM |
|--------------------|-----|--------|----------------------|------------|----------------------|
| TanmoyKarmakar | 20 | MALE | PAID | PAID | <i>Paid</i> |
| Rittick Biswas | 18 | MALE | PAID | PAID | |
| BikramadityaMondal | 20 | MALE | PAID | PAID(1500) | <i>Paid(1600)</i> |
| Debjeet Roy | 17 | MALE | PAID | PAID | <i>Paid.</i> |
| Sourik Biswas | 18 | MALE | PAID | PAID | |
| Rahul Molla | 17 | MALE | PAID | PAID | <i>Paid.</i> |
| Somnath Biswas | 18 | MALE | PAID | | |
| AshutoshAdhikary | 18 | MALE | PAID | PAID(1100) | |
| AnirbanHalder | 20 | MALE | PAID | PAID | <i>Paid.</i> |
| ShibadityaKarmakar | 19 | MALE | PAID | PAID | <i>Paid.</i> |

$$\begin{array}{r}
 10 \times 1100 = 11, \\
 1 \times 1600 = 1 \\
 \hline
 12,
 \end{array}$$

NABADWIP VIDYASAGAR COLLEGE

Department of Zoology

Session : 2019-2020



A PROJECT ON EXCURSION

In the guidance of

Dr. Madhuban Dutta

Dr. Nirmalya Das

Dr. Suchismita Chatterjee Saha

Concern teacher

Department of Zoology

Nabadwip Vidyasagar College

Nabadwip , Nadia

Submitted by:

Mr. Shibaditya karmakar

ROLL: 2112126 NO: 1976927

Reg No: 076926 of 2019-2020

College Roll : 33

ACKNOWLEDGEMENT

I would very thankful to Nabadwip Vidyasagar College, Department of Zoology to give such an opportunity to have a memorable excursion. I am duly thankful to Dr. Nirmalya Das, Dr. Suchismita Chatterjee Saha for kindly guiding us towards excursion at Dooars and surrounding including Jaldapara National Park, Khoirabari Reserve Forest, Chilapata Reserve Forest, Buddhist temple in Phuntsholing Bhutan from 22/01/2020 to 26/01/2020 and also very thankful to Dr. Madhuban Datta (Head and Associate Professor, Department of Zoology, Nabadwip Vidyasagar College, Nadia) for helping us to identify few of the species collected during excursion.

Our Team:

Our excursion team was guided by our concerned subject teachers, Dr.Madhuban Datta, Dr.Nirmalya Das and Dr.Suchismita chatterjee.

Our members are-Ashutosh Adhikary, Debshree Ratna, Pritha Pramanick, Sneha Pal, Uma Dey, Birkramaditya Mondal, Tanmoy Karmakar, Debyeet Roy, Sourik Biswas, Anirban Halder, Rittik Biswas, Shibaditya Karmakar, Rahul Molla.



Site introduction:

We chose a place beside NH31, Dakshin Madhsrihat, on the way to Jhalong from Jaldapara National park. We select one metre by one metre ten quadrants and collect species. Some quadrants were made in sunny place and some shady place.



PITFALL TRAP METHOD

Definition:-

A pitfall trap is a trapping pit for small animals, such as insects, amphibian and reptiles. Pitfall traps are mainly used for ecology studies and ecological pest control. This is form of passive collection, as opposed to activate collection where the collector catches each animal (by hand or a device as butterfly net).

Location and Time of Work:-

On the second day evening of our excursion , after returning from Chilapata safari, we arranged few plastic cups and a mug of soap water and a soil digger instrument. At first, we pointed out few areas inside the hotel we rented. There after we cooperatively dug a number of holes at the area and placed the cups inside it and bordered with soil to keep the surface level equal around it. And we poured a little amount of soap water inside the cups and keep it for our purpose.



On the next day evening , after visiting some places with natural beauties, we reached our hotel. We took our all cups and did the observation of species collected.

The birds we found:

1 Scientific Name: Gallinula chloropus sp.

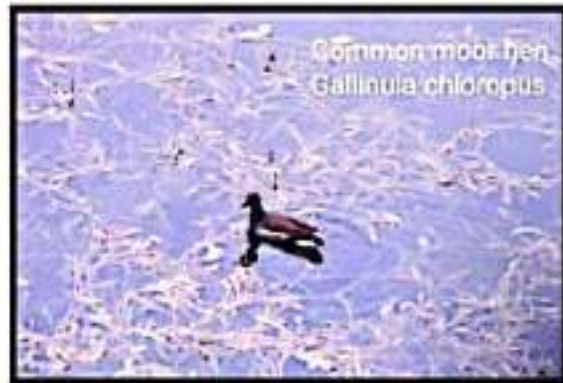
Phylum: Chordate

Class: Aves

Order: Gruiformes

Local name: Moee hen

Features: The moorhen



also known as the waterhen or, is a bird species in the rall family .

Found at 650 steps (1300) form our final point.

2 Scientific Name: Pseudibis papillosa sp.

Phylum: Chordate

Class: Aves

Order: Pelecaniformes

Local name: Red naped Ibis

Featuteres: Beak size large.

Coastal birds.



Found at 900 step (1800 ft) form start point.

Conclusion:

'Excursion ' this word is intimately related with a zoology student since it helps to understand the subject ecology and its living components, their interaction and their mode of life better. The educational tour amidst the forest and its specialized flora and fauna enriched as with a complete package of messages. The depth of the greenery made us to explore our selves and reveal the philosophically examined, and nature lovers within us.

In our excursion to Dooars, we practically examined, calculated and reported various ecological aspects that enhanced our book-based knowledge to a larger extent. Its always our extreme pleasure to experience the book-based theories practically.

This visit also taught us about the awareness that we must need for wild life and forest conservation and make a sustainable use of it and also how to be a part of nature. It gave a lesson to keep a balance between civilization and wild life. None of this two should be harmful to other one. It made us under stand the meaning of "study with nature but don't destroy it". We have learned how we should prepare ourselves such that we could create least annoyance to the organisms. The herd-ship and simplicity of the daily life of the common people put a great example of sustainable living in front of us. Besides all the hardship, the hostility of the local people made us salute their lion-hearts.

It also served as a mod of relaxation from our daily routine and also helped immensely to strengthen them our bonds between friends and teachers. Our professors were friendly and helpful, without the guidance of whom to become futile. Involvement in various indoor games and visit at various tourist spots apart from studies gave us huge happiness.

Thus, we gathered a wonderful experience, knowledge and a memorable incident for our lifetime. It really supported the literal meaning of ecology. This memory would go a long way with us and will always be cherishable. The serenity and calmness of the forests had created a peaceful environment. Lastly, a special thanks to our respected professors for conducting such a wonderful excursion and gave us an opportunity to enhance our knowledge.

Educational Tour 2019
Department of Zoology
Nabadwip Vidyasagar College

2018 - 2019

Student list

| Name | Class | Signature with Date |
|---------------------|----------------------|-----------------------------|
| MANABENDRA SARKAR | 1 st sem | Manabendra Sarkar. 7/5/19 |
| SAYAN DEBNATH | 1 st sem | Sayan Debnath 07/05/19 |
| ANIKET BHOWMICK | 1 st sem | Aniket Bhowmick. |
| ARNAB CHAKRABORTY | 1 st sem | Arnab Chakraborty |
| HRIK MAJUMDER | 1 st sem | Hrik Majumder 7.05.19 |
| ARINDAM DEBNATH | 1 st sem | Arindam Debnath 07.05.19 |
| ARPAN MALLICK | 1 st sem | Arpan Mallick 07.05.19 |
| FARIAD MALLICK | 1 st sem | Fariad Mallick 07-05-19 |
| GOBINDO SAHA | 1 st sem | Gobindo Saha 7/5/19 |
| AMIT KUMAR GHOSH | 1 st sem | Amit kumar Ghosh 07.05.19 |
| ISHITA BISWAS | 2 nd year | Ishita Biswas 07.05.19 |
| SHREYA SAHA | 2 nd year | Shreya Saha 7.5.19 |
| SUPRITI SANTRA | 2 nd year | Supriti Santra 07.05.19 |
| AKASH DEBNATH | 2 nd year | Akash Debnath 7.5.19 |
| SUMAN DUTTA | 2 nd year | Suman Dutta 7.5.19 |
| LJA RAJBANSHI | 2 nd year | Lija Rajbanshi 07.05.19 |
| MASHUM ARIF HALSANA | 3 rd year | Mashum Arif Halsana 10.5.19 |
| SUPRIYA DEBNATH | 3 rd year | Supriya Debnath 10.5.19 |
| SALMA MALLICK | 3 rd year | Salma Mallick 10.5.19 |
| SUPROVA MONDAL | 3 rd year | Suprova Mondal 10.5.19 |
| SUMITA MAJUMDER | 3 rd year | Sumita Majumder. |
| ADITYA SEN | 3 rd year | Aditya Sen 14/5/19 |
| RITTIJA DUTTA | 3 rd year | Ritija Dutta 14/5/19 |
| ANAMIKA ADHIKARY | 3 rd year | Anamika Adhikary 14/5/19 |
| MAMATA BISWAS | 3 rd year | Mamata Biswas 10.5.2019 |
| MRINMOY MONDAL | 3 rd year | Mrinmay Mondal 10.05.2019 |

UNIVERSITY OF KALYANI



NABADWIP VIDYASAGAR COLLEGE
NABADWIP, NADIA



EXCURSION TO GOPALPUR & DARINGBADI

B.SC 3 YEAR DEGREE HONOURS PART- II EXAMINATION 2019

ROLL NO- 212-18126-0127

REGISTRATION NO- 024036

SUBJECT-ZOOLOGY

YEAR - 2018-2019



DEPARTMENT OF ZOOLOGY
NABADWIP VIDYASAGAR COLLEGE
NABADWIP, NADIA, WEST BENGAL, PIN-741302

To whom it may concern

This is to certify that Suman Dutta of B.Sc
Part - II Zoology (Hons) Roll 212-18126 No
0127 Registration No 024036 of 2017-2018

has participated in educational tour organised by the Department of Zoology ,
Nabadwip Vidyasagar College from 16th January 2019 to 20th January .



mdatta
22/7/19

Signature of teacher guide

Acknowledgement

I, Suman Dutta would like to thank Nabadwip Vidyasagar College Zoology Department to give us such an opportunity to have a memorable excursion .

I am thankful toward Dr. Madhuban Datta and other teachers for kindly guiding us towards educational tour at Daringbadi and Gopalpur , Odisha from 16th to 20th January .

I have gained a frist- hand knowledge regarding the ex-situ conservation methods and witnessed the marine biodiversity at the beaches of Gopalpur . For which I will remain very greatfull towards my teachers .

Content

| | |
|----------------------------|-------|
| ➤ Introduction | 4 |
| ➤ Our Team | 7 |
| ➤ Preparation & Tour Diary | 8 |
| ➤ Excursion report 1 | 11-18 |
| ➤ Excursion report 2 | 19-26 |
| ➤ Conclusion | 26 |

Introduction

Excursion has become a compulsory subject of education in the form of a tour to the students of zoology . it helps the students to observe different kinds of animal and to study them in their natural habitat . practical knowledge them in saturated without zoological excursion can't be saturated without Zoological Excursion .

Importance of excursion

- Excursion helps us to know about the eco system and the animals that live in it i.e. the excursion spot and gather first hand knowledge about there natural habitat .
- To study the flora and fauna of a localized area .
- It also provides us information related to conservation of various flora and fauna by various methods .
- It helps us to relate the books with nature .
- Excursion is a medium of learning with fun .

Through Excursion , we gather knowledge practically .

Introduction to excursion zone

1, Daringbadi :

Daringbadi is a hill station in kandhmal district of Odisha , (for its climatic similarity) , it is situated at a height of 3000ft and is a popular tourist destination . The hill station coordinates lie between 19.9° N latitude , and 84.13333° E longitude . It occupies an area of approximately 6 km² .



Fig :- Daringbadi, Odisha , Satellite view .



2, Gopalpur :

Gopalpur is a town and a Notified area council on the Bay of Bengal coast in Ganjam district in the southern part of Odisha , India . It is a famous sea beach and tourist destination around 15 km from Berhampur . The city coordinates lie between 19.27° N latitude and 84.92° E longitude . It occupies an area of approximately 193.37 Km² .



Fig :- Gopalpur , Odisha , Satellite view .

Our Team :

Our excursion team was guided by our concerned subject teachers , Dr. Madhuban Datta , Dr. Suchismita Chatterjee Saha , Dr. Nirmalya Das and Tapas Patra along with the lab assistant Monotosh Sarkar. The members of the team are 2 nd semester exam appearing students along with part -2 exam appearing students of Department of Zoology of Nabadwip Vidyasagar College affiliated to University of Kalyani .

The members are – Manabendra Sarkar , Aniket BHowmik , Sayan Debnath , Hrik Majumder , Arnab Chakraborty , Arindam Debnath , Arpan Mallik , Ishita Biswas , Shreya Saha , Ankita Paul , Supriti Santra , Akash Debnath , Suman Dutta , Pinaki Biswas , Liza rajbanshi , Rahul Saha , Sapta Tirtha Sharma , Mashum Arif Halsana , Supriyo Debnath , Salma Mallick , Suprova Mondol , Mamata Biswas , Aditya Sen , Rittija Dutta , Susmita Majumder , Anamika Adhikary .



Fig:- Our Team

Preparation :

We collected equipment necessary for specimen collection like 10% Formalin , specimen tubes , a big jar , a plankton net , notebook , pencil , camera , sticky tape , specimen lable and first aid kit .

Tour Diary :

We started our journey on 16th January 2019 from Howrah with our professors.

16.01.2019

We departed howrah at 8:35 pm by 12863-Yesvantpur SuperFast Express .

17:01:2019

We arrived Brahmapur station at 6:00 am on 17th January 2019. Then by bus we reached our 1st destination , Daringbadi at around 12 pm . we stayed at Hotel Utopia . then after lunch we visited the local Emu zoo and Daringbadi Nature Park .



Fig:- Daringbadi Nature Park .



Fig:- Emu Zoo .

We got the complete knowledge about Emu birds and some statues of local tribes with various kinds of flowers at the Natural Park . Then we came back to the hotel and stay in the hotel that night .

18.01.2019

In early morning we leave the hotel and started for gopalpur sea beach . in the way to gopalpur we watch the Daringbadi coffee garden , Taptapani and Daringbadi kandhmal waterfalls . Then we reached gopalpur sea beach at 6:00



Fig:- Taptapani



Fig:- Daringbadi Khandmal
Waterfalls



Fig:- Daringbadi Coffee Garden

Pm . Then after reaching the Green Park hotel we go out to see the sea beach .
we came back at around 8.30 pm .

19.01.2019

In this day , at morning , around 5.00 am we went to the sea beach again . after spent some time at the beach we came back at around 8.00 am . We go for the gopalpur fish market at 10.30 am . there we see the fish market and also the Crab Sanctuary . We came back to hotel again at 12.30 pm . Then we set out for our return journey at around 3.00 pm . we reached the Bramhapur station at 5.00 pm . Then by 12840 Howrah Mail at 5.50 pm we reached Howrah at 4.00 am .



Excursion Report - I

DARINGBADI

The EMU Zoo :-

Introduction:- The Emu Zoo is located at the Phulbani Road, Daringbadi. It is a beautiful tourist place where the animal EMU is found and it is a pet in farm house.

Description of EMU:- The emu (*Dromaius novaegollandiae*) is the 2nd largest living bird by height. The emu's range covers most of mainland Australia, and in some places of the world. It are soft-feathered, brown, flightless birds with long neck and legs, and can reach upto 1.9 meters in height, and when necessary it can sprint at 50km/h.

Conservation status:- Least Concern(IUCN 3.1)

Systemation Position:-

Kingdom: Animalia

Phylum: Chordata

Class: Aves

Order: Casuariformes

Family: Casuariidae

Genus: *Dromaius*

Species:

D.

novaeollandiae



Behaviour and Ecology:- i. Diurnal birds and spend their day foraging, preening their plumage with their beak, ii. Gregarious bird apart from breeding seasons, iii. Able to swim when necessary, iv. Begin to settle down at sunset and sleep during the night, they do not sleep continuously but rouse themselves several times during the night.

Food Habit:- i) Forage in a diurnal pattern and eat a variety of native and introduced plant species, ii) Plants such as Acacia, Casuarina, and grass being favoured, iii) Also eat insects and other Arthropods including grasshoppers, and crickets, beetles, cockroaches, ants spiders and millipeds.

Breeding:- i) Forms breeding pairs during the December and January and may remain together for 5 months, ii) Both males and females put to weight and female become slightly heavier at between 45-58 kg, iii) Mating takes place between April and June, the exact timing is determined by the climate as the birds nest during the coldest part of the year.

Nature & Butterfly Park:-



Butterfly park is located at Phulbani Road, Daringdai. 2 hectares is being managed and maintained by the local management committee. The Nature & Butterfly park is 2nd of its kind after Nandankanan.

There are some plant species and some faunal species are found. i.e.

Fauna:- Butterfly:-

- i) *Spindasis vulcanus* (Silverline)
- ii) *Caleta decida*, (Angled pierrot)
- iii) *Tanaecia lepidae* (Gney count),
- iv) *Chilas clytia*, v) *Athyma*
- perius* (Common sergeant) etc.



Fig: *Caleta decida*



Fig: *Spindasis vulcanus*

Birds:-

- i) *Spilornis cheela* (Crested serpent eagle),
- ii) *Passer domesticus* (House sparrow),
- iii) *Dicrurus macrocercus* (Black Drongon),
- iv) *Lonchura punctulata* (Scales breasted munia),
- v) *Merops orientalis* (Green bee eaters) etc.

Flora:- Plants:-

Pentas sp, *Lantana sp*, *Ixora sp*, *Helicteres sp*, *Barleria sp*, *Nerium sp*, *Zinnia sp*, *Hibiscus sp*, etc.



Mirubanda waterfalls:-

Mirubanda waterfalls or popularly known as the Dashingbadi waterfalls is one of the most beautiful tourism spot in Daringbadi. It is situated just beside the Daringbadi, Brambanigram road, between three panchagets. They are Sipubadi, Tekangia, Gudrimera. It is a natural falls, originated from hill streams. There is no locality by the side of this place. No modernization make the place more tempting for nature lovers.



We reached at this place at about 1p.m. We have to walk down 176 steps for reaching in this place. There we saw many faunal diversity including the soulfull falls. They are—

(i)Corvus sp:-

This is a common bird, that is seen in always every latitude. They are also known for living in flocks.

Seen Characters:- i)Black coloured coat on the body.ii) Strong legs and powerful grip.iii) Medium sized carnivorous.

Systematic Position:-

Kingdom- Animalia

Phylum:- Chordata

Class:- Aves

Order:- Passeriformes

Family:- Corvidae

Subfamily:- Corvinae

Genus:- Corvus



Binomial name:- *Corvus sp.*

Habitat:- They live in tropical and sub tropical areas usually on the tree. **Food**

Habit:- Carnivorous, they usually eat up all the wastes of humanity.

Conservation Status:- Least concern(IUCN 3.1)

ii)Zeltus sp:-

Seen Characters:- i)Wingspan is 28-32 mm. ii) Has long fluffy tail, which make it recognizable. iii) White, flur like wings. iv) Hindwing colour is pale blue in male.

Systematic Position:-

Kingdom:- Animalia

Phylum:- Arthropoda

Class:- Insecta

Order:- Lepidoptera

Family:- Lycaenidae

Subfamily:- Theclinae

Genus:- Zeltus



Binomial name:- *Zeltus sp.*

Habitat:- Found at hot, wet forest areas. **Food Habit:-** Nectar from tropical flowers.

iii)Water striders:-

Seen characters:- i)Has long hydrofuge hairpits. ii) Size small, long legged insects. iii)Has 2 antenna with 4 segments. iv) Thorax is long and narrow in size.

Systematic Position:-

Kingdom:- Animalia

Phylum:- Arthropoda



Class:- Insecta

Order:- Hemiptera

Suborder:- Heteroptera

Superfamily:- Gerroidea

Family:- Gerridae

Subfamily:- Gerrinae

Habitat:- Lives in the water body or by the side of the water body.

Food habit:- Usually eats small insects and herbs.

pH of Water:-

The pH of the water of Mirubanda Waterfalls is almost 7.5.

Deer Park, Chandragiri range:-

Location:- Deer park of Taptapani is a small zoo located near Taptapani hot water spring, in Ganjam district of Odisha.

Here we can found 3 species of deer- barking Deer (*Muntiacus muntiac*), Black Buck (*Antelope cervicapra*) and Spotted Deer (*Axis axis*).

The Indian Black Buck:-

The Indian Black Buck(*Antelope cervicapra*) is one of the 3 species of antelopes found in Odisha which is considered to the fastest animal in the world after cheetah. There has been a dissolute decline in the population of Black bucks due to poaching and habitat loss. Black Buck is included in the Schedule-I of wild Life Protection Act 1972 and designated as Vulnerable as per Red Data book(1994).

Characters:- i)Medium sized antelope, horns are branched "corks creve" spiral, grow upto 50 cm, ii)Adult male is black or dark brown, iii) Height 80 cm at shoulder, iv)Weight about 40 kg, v)Life span 15 years, vi)Eat fresh tender leaves, grasses, pods flowers and fruits, vii) Generally breed in all seasons with peak between Feb-March sexual maturity with 2 years, viii)Periods of gestation is 6 months.



The Barking Deer:-

The Barking Deer (*Muntiacus muntjak*) is also known as Mastreani Deer. The loud bark called sharp barks sound like a dog's bark so the deer is called Barking Deer. It is included in the Schedule-III of Wild Life Protection Act 1972 as least concern.

Characters:- i) Males have short antlers which are carried on long hairs covered structure, ii) Fore limbs are shorter than hind limbs and males have long upper canines that are not always visible, iii) Height 50 cm, iv) weight 15-35 kg, v) Eat leaves, grasses and wild fruits, vi) sexually mature within 2 years, vii) Life span 10-12 years.

The Spotted Deer:-



It is also known as Chital or axis deer. The Chital is listed by IUCN as being of least concern because it occurs over a very wide

range within which there are many large populations. They are under schedule III of Wild Life Protection Act, 1972.

Characters:- i) Brownish fawn pat marked with white spots on body, ii) Height 90 cm and weight about 85 kg, iii) Males carry 3 poned antlers extending upto 23 ft, iv) They generally eat grasses, leaves and vegetation including buds, fruits. v) Generally breed in Nov-Dec, vi) Life span is about 14 years.

Excursion Report - II

GOPALPUR



Marine Animals Diversity:-

Mud crab

Latin name: *Scylla serrata*

French: *Crabe*

Availability: west and East coast of India , coasts of Orissa, Also found in kerala,Tamilnadu,West Bengal.



Puffer fish

It is a most poisonous fish of world. They are scale less fish and usually have rough to spiky skin. All have four teeth that are fused together into beak like form.

Classification:-

Kingdom: Animalia

Phylum: Chordata

Class: Actinopterygii

Order: Tetraodontiformes

Family: Tetraodontidae

Species: Tetraodontidae Sp.



Olive Ridely Sea Turtle

It is also known as Pacific ridely sea turtle. It is the second smallest and most abundant of all sea turtles found in the world. We found this species at Gopalpur sea beach.

From the local people we came to know that a dead olive ridley sea turtle washed ashore and bloated with decomposition gases at Goolirmatha beach, Odisha.

Classification:-

Kingdom: Animalia

Phylum: Chordata

Class: Reptilia

Order: Testudines

Family: Cheloniidae

Genus: *Lepidochelys*

Species: *L. Olivacea*



Upeneus moluccensis

Classification:-

Kingdom: Animalia

Phylum: Chordata

Class: Actinopterygii

Order: Perciformes

Family: Mullidae

Genus: *Upeneus*

Species: *Upeneus*



Distribution:-

It has an Indo-West Pacific distribution, occurring from the Red Sea to New Caledonia and as far north as Japan and south to northern Australia.

Description:- It has an elongated body which has a sub-cylindrical anterior portion.

It has two dorsal fins which are well separated with the second dorsal fin directly above the anal fin.

The caudal fin is deeply forked, The vomer are covered in brush-like or villiform teeth. The pectoral fin is colourless.

Leiognathus equulus

Common name:- Ponyfish

Classification:-

Kingdom: Animalia

Phylum: Chordata

Subphylum: Vertebrata

Class: Actinopterygii

Order: Perciformes

Family: Leiognathidae

Genus: Leiognathus

Species: Equulus



Size range: The species grows to 25cm in length.

Habitat: It occurs in estuarine and coastal waters. It is also known from muddy river mouths and sometimes ascends into fresh waters.

Distributions: It occurs in the Indo-West Pacific. In Australia it is known from off North-Western Australia, around the tropical north and south to southern Queensland.

Trachurus trachurus

Etymology: *Trachurus*: Greek, trachys, -elays=rough+Greek, *Oura*-tail.

Classification:-

Kingdome: Animalia

Phylum: Chordata

Class: Actinopterygii

Order: Perciformes

Family: Carangidae

Genus: *Trachurus*

Secies: *Trachurus trachurus*



Environment:

Climate zone:- distribution range.

Depth zone:- 0 to 1050 m., usually 100-200 m.

Subtropical; 67°N to 19°S, 26° W to 41°E

Description:

Maturity: Lm 23.9

Range: 21-30cm

Max length: 70.0cm

Common length: 22.0cm

Dorsal spines: 9

Dorsal soft rays: 30-36

Anal spines: 3

Anal soft rays: 24-32

Colour: Bluish green, gray or black above, Silvery white below.

Malacofaunal Diversity:

Anadara sp.

Systematic position:-

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Order: Arcida

Family: Arcidae

Genus: *Anadara*

Species: *Anadara sp.*



Sunetta meroe

Systematic position:-

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Order: Venerida

Family: Veneridae

Genus: *Sunetta*

Species: *Sunetta meroe*



Meretrix casta

Systematic position:-

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Order: Venerida

Family: Veneridae

Genus: Meretrix

Species: Meretrix casta



Meretrix meretrix

Systematic position:-

Kingdom: Animalia

Phylum: Mollusca

Class: Bivalvia

Order: Venerida

Family: Veneridae

Genus: Meretrix

Species: Meretrix meretrix



Biplex spinosa

Systematic position:-

Kingdom: Animalia

Phylum: Mollusca

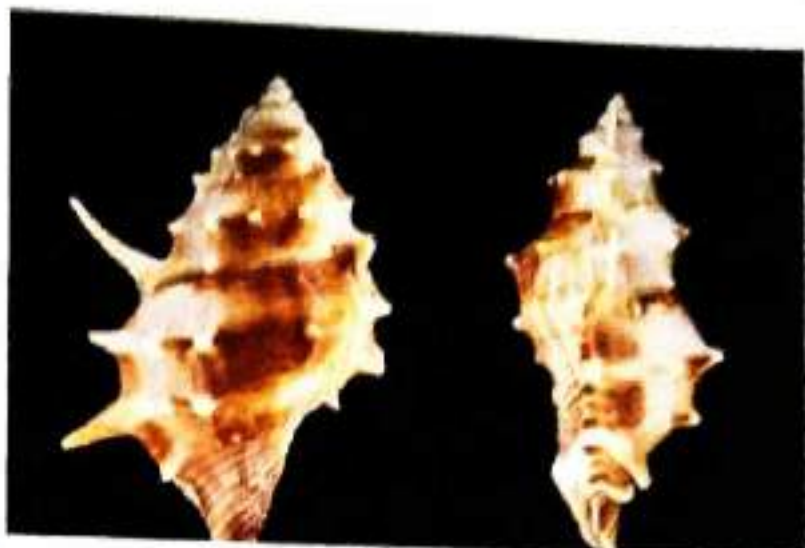
Class: Gastropoda

Order: Liornimorpha

Family: Bursidae

Genus: Biplex

Species: *Biplex spinosa*



Saccostrea sp.

Systematic position:-

Kingdom: Animalia

Phylum: Mollusca

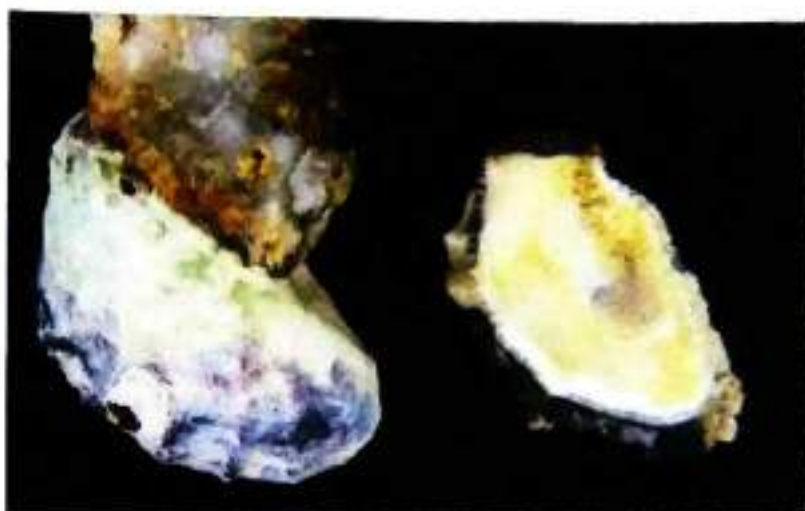
Class: Bivalvia

Order: Ostreida

Family: Ostreidae

Genus: *Saccostrea*

Species: *Saccostrea sp.*



Conclusion: -

Excursion is of much importance to a zoology student to better understand the ecology and its living components, their interactions and their mode of life. This also enriches us with the awareness that we need for its conservation and if need, make a sustainable use of it. Civilization is a dream of mankind from the very early period. But our so called civilization, better life-style is proving very harmful so much animal which are now at the verge of extinction.

So we should keep in mind that our betterment, our comfort not harms other species of animals and plants. We should remember that "Study with nature, but don't destroy it."



2017 - 2018

Educational Tour 2017
Department of Zoology
Nabadwip Vidyasagar College

Student list

| SL NO | Name | Class | Gender |
|-------|----------------------|----------------------|--------|
| 1 | Ayan Das | 1 st Year | Male |
| 2 | Akash Debnath | 1 st Year | Male |
| 3 | Sajal Nath | 1 st Year | Male |
| 4 | Anshuman Saha | 1 st Year | Male |
| 5 | Rahul Saha | 1 st Year | Male |
| 6 | Saptatirtha Sharma | 1 st Year | Male |
| 7 | Shobhan Ghosh | 1 st Year | Male |
| 8 | Shreya Saha | 1 st Year | Female |
| 9 | Ishita Biswas | 1 st Year | Female |
| 10 | Ankita Paul | 1 st Year | Female |
| 11 | Deblina Roy | 1 st Year | Female |
| 12 | Aditya Sen | 2 nd Year | Male |
| 13 | Mrinmoy Mondal | 2 nd Year | Male |
| 14 | Supriya Debnath | 2 nd Year | Male |
| 15 | Suraj Biswas | 2 nd Year | Male |
| 16 | Mashum Arif Halsana | 2 nd Year | Male |
| 17 | Anamika Adhikary | 2 nd Year | Female |
| 18 | Riya Saha | 2 nd Year | Female |
| 19 | Shreya Modak | 2 nd Year | Female |
| 20 | Suprova Mondal | 2 nd Year | Female |
| 21 | Salma Mallick | 2 nd Year | Female |
| 22 | Mamoni Ghosh | 2 nd year | Female |
| 23 | Soumita Das | 3 rd Year | Female |
| 24 | Krishna Sardar | 3 rd Year | Female |
| 25 | Riya Khatun | 3 rd Year | Female |
| 26 | Provati Rajak | 3 rd Year | Female |
| 27 | Somasree Chakroborty | 3 rd Year | Female |
| 28 | Labani Gupta | 3 rd Year | Female |



Handwritten signature
31-10-17

Teacher-in-charge
Nabadwip Vidyasagar College

Handwritten signature
24/11/17
HOD of Zoology
Nabadwip Vidyasagar College
Nabadwip, Nadia

Educational Tour 2019
Department of Zoology
Nabadwip Vidyasagar College

2018 - 2019

Student list

| Name | Class | Signature with Date |
|---------------------|----------------------|-----------------------------|
| MANABENDRA SARKAR | 1 st sem | Manabendra Sarkar. 7/5/19 |
| SAYAN DEBNATH | 1 st sem | Sayan Debnath 07/05/19 |
| ANIKET BHOWMICK | 1 st sem | Aniket Bhowmick. |
| ARNAB CHAKRABORTY | 1 st sem | Arnab Chakraborty |
| HRIK MAJUMDER | 1 st sem | Hrik Majumder 7.05.19 |
| ARINDAM DEBNATH | 1 st sem | Arindam Debnath 07.05.19 |
| ARPAN MALLICK | 1 st sem | Arpan Mallick 07.05.19 |
| FARIAD MALLICK | 1 st sem | Fariad Mallick 07.05.19 |
| GOBINDO SAHA | 1 st sem | Gobindo Saha 7/5/19 |
| AMIT KUMAR GHOSH | 1 st sem | Amit kumar Ghosh 07.05.19 |
| ISHITA BISWAS | 2 nd year | Ishita Biswas 07.05.19 |
| SHREYA SAHA | 2 nd year | Shreya Saha 7.5.19 |
| SUPRITI SANTRA | 2 nd year | Supriti Santra 07.05.19 |
| AKASH DEBNATH | 2 nd year | Akash Debnath 7.5.19 |
| SUMAN DUTTA | 2 nd year | Suman Dutta 7.5.19 |
| LJA RAJBANSHI | 2 nd year | Lija Rajbanshi 07.05.19 |
| MASHUM ARIF HALSANA | 3 rd year | Mashum Arif Halsana 10.5.19 |
| SUPRIYA DEBNATH | 3 rd year | Supriya Debnath 10.5.19 |
| SALMA MALLICK | 3 rd year | Salma Mallick 10.5.19 |
| SUPROVA MONDAL | 3 rd year | Suprova Mondal ch. Mondal |
| SUMITA MAJUMDER | 3 rd year | Sumita Majumdar. |
| ADITYA SEN | 3 rd year | Aditya Sen 14/5/19 |
| RITTIJA DUTTA | 3 rd year | Ritija Dutta 14/5/19 |
| ANAMIKA ADHIKARY | 3 rd year | Anamika Adhikary 14/5/19 |
| MAMATA BISWAS | 3 rd year | Mamata Biswas 10.5.2019 |
| MRINMOY MONDAL | 3 rd year | Mrinmoy Mondal 10.05.2019 |

2019-2020

1st YEAR FEMALE

| NAME | AGE | GENDER | 1 st TERM | 2 nd TERM | 3 rd TERM |
|-----------------|-----|--------|----------------------|----------------------|----------------------|
| Uma Dey | 17 | FEMALE | PAID | PAID(3100) | PAID |
| DebshreeRatna | 18 | FEMALE | PAID | PAID | PAID. |
| Sneha Pal | 18 | FEMALE | PAID (1000) | PAID(2000) | |
| Rani Khatun | 18 | FEMALE | | | |
| PrithaPramanick | 18 | FEMALE | PAID | PAID | PAID. |

2nd YEAR MALE

| NAME | AGE | GENDER | 1st TERM | 2 nd TERM | 3 rd TERM |
|----------------------|-----|--------|----------------|----------------------|----------------------|
| Manabendra Sarkar | 19 | MALE | PAID | PAID | PAID |
| ArindamDebnath | 19 | MALE | PAID | PAID | PAID |
| SayanDebnath | 19 | MALE | PAID | PAID | PAID |
| HrikMajumder | 19 | MALE | PAID (1000) | PAID(3000) | PAID. |
| Arnab Chakraborty | 19 | MALE | PAID | PAID | PAID |

CONTENT

- ❖ CERTIFICATION
- ❖ INTRODUCTION
- ❖ OUR TEAM
- ❖ DESCRIPTION OF TOUR
- ❖ MATSHYA DARSHINI
AQUARIUM
- ❖ INDIRA GANDHI
ZOOLOGICAL PARK
- ❖ RAMA KRISHNA BEACH
- ❖ VIZAG FISH MARKET
- ❖ SIMMACHALAM
TEMPLE

- ❖ BORRA CAVE
- ❖ INS KURSURA
- ❖ ACKNOWLEDGEMENT

INTRODUCTION

Excursion has become a compulsory subject of education in the form of a tour to the student of Zoology. It helps the student to observe different kinds of animal and to study them in their natural habitat. Practical knowledge can't be saturated without zoological excursion.

Importance of excursion:

1. Excursion helps us to know about the ecosystem and the animals that live in it i.e. the excursion spot and gather a first-hand knowledge about their natural habitat.
2. To study the flora and fauna of a localised area.
3. It also provides us information related to conversation of various flora and fauna by various methods.
4. It helps us to relate the nooks with nature.
5. Excursion is a medium of learning with fun.

Through excursion we gather knowledge practically.

OUR TEAM

Students:

1. Ayan Das
2. Akash Debnath
3. Sajal Nath
4. Anshuman Saha
5. Rahul Saha
6. Shreya Saha
7. Ishita Biswas
8. Saptatirtha Sharma
9. Ankita Paul
10. Deblina Roy
11. Aditya Sen
12. Suraj Biswas
13. Mashum Arif Halsana
14. Mrinmoy Mondal
15. Anamika Adhikary
16. Riya Saha
17. Shreya Modak
18. Suprova Mondal
19. Salma Mallick
20. Soumita Das
21. Krishna Sardar
22. Riya Khatun
23. Provati Rajak
24. Somasree Chakroborty
25. Labani Gupta

Professors:

1. Dr. Madhuban Datta
2. Dr. Suchismita Chatterjee
3. Dr. Nirmalya Das
4. Tapas Patra (GL)

Non-Teaching Staff:

1. Monotosh Sarkar

DESCRIPTION OF TOUR

Preparation:

We collected the equipment necessary for specimen collection like 10% formalin, specimen tubes, a big jar, a plankton net, note book, pencil, camera, sticky tape, specimen label, glue, and first aid kit.

Description of journey:

We started our journey on 5th December 2017 from Nabadwip at 10 am with our professor Dr. Madhuban Datta, Dr. Nirmalya Das, Dr. Suchismita Chatterjee and Tapas Patra.

05/12/2017:

Left Howrah at 6:15 pm by Vishakhapatnam superfast express.

06/12/2017:

We arrived Vishakhapatnam junction at 10:30 am and we reached hotel at 11:00 am and same day we visit R.K beach and fish aquarium. We visit R.K beach around 4:00 pm and visited marine beach at 6:00 pm.

In Matsya Darshini Aquarium we saw many fish and other marine animals. Our professor told us about them in details. Then come back to hotel at 7:30 pm and night Holt at Vizag.

07/12/2017:

After morning after breakfast we visited Varaha Lakshmi Narashimha temple at Simhachalam at 08:40 am. And then we visited Indira Gandhi Zoological park at 11:00 am. In IGZP we saw variety of birds and mammals. Our professor gave details about them. Then we come back to hotel. On the day after launch we visited Park and R. K beach again. Then come back to hotel at 6:00 pm.

08/12/2017:

Early morning after breakfast we left for Araku around 7:15 am by bus and arrived Araku valley at 10:10 am. We enjoyed the incredible view of Araku valley from bus. That day after launch we visited Borra Cave. Professor told us about the history behind Borra Cave. Then we come back to hotel.

09/12/2017:

In early morning after breakfast we visited fishing harbour and collected many marine species. Our professor helped to study them.

We visited R. K beach to collect specimen and sea water to test its biological nature then come back to hotel. After launch we set for our return journey by Karamandal Express at 12:00 pm and arrived Howrah by 3:15 am next day.

MATSHYA DARSHINI AQUARIUM

Matshya Darshini Aquarium is a beautiful air conditioned aquarium located on the shore of R.K beach. The aquarium is set up and managed by municipal corporation of Vishakhapatnam. the site has a municipal Commissioners Banglow until May 1990 however it was turned into an aquarium in 1994.

Housing more than 20 medium and large sized tanks, the aquarium is famous for displaying the fresh water and marine fish and various aquatic animals. A part from this the aquarium also exhibits many rare aquatic species which were bought from distant such as Singapore and Malaysia.

Tourist can witness varieties of the long horn cow fish, surgeon major butterfly fishes, the lion fish etc. Beside fishes the aquarium also displays a wide variety of uncommon marine invertebrates.

ANIMALS OBSERVED IN MARINE AQUARIUM

| Name | Scientific Name | Family |
|----------------|----------------------------------|---------------------|
| Spiny Lobster | <i>Panulirus sp.</i> | <i>Palinuridae</i> |
| Hermit crab | <i>Diogenes sp.</i> | <i>Diogenidae</i> |
| Sea snake | <i>Hydrophis sp.</i> | <i>Elapidae</i> |
| Sting ray fish | <i>Trygon sp.</i> | <i>Dasatidae</i> |
| Guitar fish | <i>Rhynchobatus diddensis</i> | <i>Rhinobatidae</i> |
| Sucker fish | <i>Echeneis sp.</i> | <i>Echeneidae</i> |
| Angel fish | <i>Pterophyllum scalare</i> | <i>Cichlidae</i> |
| Barb fish | <i>Burbus app.</i> | <i>Cyprinida</i> |
| Conviticnid | <i>Amatitlania higrofasciata</i> | <i>Cichlidae</i> |
| Moray eel | <i>Gymnothorax sp.</i> | <i>Muraenidae</i> |

| | | |
|---------------------|-----------------------------|-----------------------|
| Hog fish | <i>Lachnolaimus maximus</i> | <i>Labridae</i> |
| Moomwarasse | <i>Thalassoma inuare</i> | <i>Labridae</i> |
| Milk spotted puffer | <i>Chelondon</i> | <i>Tetraodontidae</i> |
| Target fish | <i>Teraponjar bua</i> | <i>Tetraodontidae</i> |
| Concertina fish | <i>Drepane congimana</i> | <i>Drepaneidae</i> |
| Electric ray fish | <i>Torpedo sp.</i> | <i>Torpedinidae</i> |
| Hammer head shark | <i>Sphyrna sp.</i> | <i>Sphyrnidae</i> |
| Guppy | <i>Poecilia reticulate</i> | <i>Poeciliidae</i> |
| Cat Fish | <i>Ictalurus punctatus</i> | <i>Ictaluridae</i> |

INDIRA GANDHI ZOOLOGICAL PARK

Indira Gandhi Zoological Park is located in Kambalakonda reserve forest in Visakhapatnam A.P India.

The Zoological Park is named after the former prime minister of India, Indira Gandhi. It was declared open to public on 19 may 1974. It converses an area of 625 acres (253ha). It is situated in Vishakhapatnam amidst the scenic Eastern Ghats of India. It is surrounded by Eastern Ghats on three sides and Bay of Bengal on the fourth sides.

Nearly eighty species of animals numbering to about eighty hundred to thousand are present in the zoo. The zoo park has different section for primate, carnivores, lesser carnivores, small mammals, reptiles and birds caged in their natural ambiance.

Species Diversity:

There are 80-90 species of mammals' birds and reptiles in the zoo. The zoo has enclosed for primates, carnivores, mammals and birds with well-planned layout a jungle along a water body inside the zoo.

❖ **Birds:**

Pelican (Rose & Grey), Painted Stork, Peafowl, Duck, Spotted Dove, Macaw, Ostrich, Emu, Eagle, Vulture etc.

❖ **Primates:**

Common Languor, Bonnet Monkey, Rhesus Monkey, Olive Baboon, Mandrill, Ring Tailed Lemur.

❖ **Herbivores:**

Barking deer, Elephant, Wild Boar, Sambar Deer, Nilgai, hippopotamus, Giraffe.

❖ **Carnivores:**

Tiger, Asiatic Lion, Leopard, Cheetah, Puma, Jaguar.

❖ **Reptiles:**

Python, snake, Land Tortoise, Terrapin, Water Monitor Lizard, Monitor Lizard, Garial.

Along with this the nocturnal animal house has owls, civets, porcupines etc.

Importance of Zoological Garden:

Zoological garden it means of ex-situ conservation of fauna. In this types of conservation, certain fauna is brought from their natural habitat and are kept in captivity in replica of their natural habitat. Sometimes captive breeding is performances in case of certain species enlisted in red data book.

RAMA KRISHNA BEACH

The Rama Krishna beach is one of the most popular beach park in Vishakhapatnam Andhra Pradesh. It gets its name from the park. The beach is best known for the “**INS Kursura Museum**” which preserve the Kalvari class sub-marine.

THE FOLLOWING SPECIES OBSERVES IN SEA BEACH

| Name | Phylum |
|------------|----------|
| Jelly Fish | Cnidaria |

| | |
|-------------|------------|
| Red crab | Arthropoda |
| Hermit Crab | Arthropoda |
| Ballanus | Arthropoda |
| Small Fish | Teleostomi |
| Seagull | Aves |
| Loligo | Mollusca |

VIZAG FISH MARKET

The one of the Indian fish market is Vizag in Vishakhapatnam. The market will come up at the fishing harbour, besides Vishakhapatnam Port. The existing market will be dismantled. The Vishakhapatnam port trust (V.P.T) will give around 2200 square ft. of Land market.

| Name | Scientific name | Family |
|---------------------|---------------------------------|----------------|
| Leather Jacket Fish | <i>Oligoplites saurus</i> | Carangidae |
| Seer Fish | <i>Scomberomorus guttatus</i> | Scombridae |
| Pomfret | <i>Brama brama</i> | Bramidae |
| Hilsa | <i>Tenualosa illisha</i> | Clupeidae |
| Basa Fish | <i>Pangasius bocourti</i> | Pangasiidae |
| King Prawn | <i>Penaeus monodon</i> | Crustaceans |
| Sword Fish | <i>Xiphias gladius</i> | Xiphiidae |
| Silver Sillago | <i>Sillago sihama</i> | Sillaginidae |
| Ribbon Fish | <i>Desmondema polystictum</i> | Trachipteridae |
| Trout Fish | <i>Salmo obostusirostris</i> | Salmonidae |
| Flat Fish | <i>Pleuronectiformes erumei</i> | Psettodidae |

SIMACHALLAM TEMPLE

The Shri Varaha Lakshmi Narshimha Temple Simmachallam is south Indian Hindu temple situated on the Simmachalam hill, which is 800 meters above the sea level at a distance of ten miles to the north of Vishakhapatnam A.P. It is dedicated to one of the Hindu trinity deities Vishnu who is worshipped there as Varaha Narshima.

BORRA CAVE

The Borra Cave, also called Borra Guhalu are located on the east coast of India, in the Ananthgiri hills of the Araku valley of the Vishakhapatnam district of A.P.

The caves one of the largest in the country at elevation of about 705m (2313Ft) distinctly exhibit a variety of speleothems ranging in size and irregularly shapes and tenagmites.

These caves were discovered in 1807 by William King George of the Geological Survey of India.

INS KURSURA

Ins Kursura was Kalari class diesel electric submarine of the Indian navy. She was Indians fifth submarine. Kursura was commissioned on 18 December 1969 and was decommissioned on 27 February 2001 after 31 years of service. She participated in the Indo-Pakistan war of 1971 where she played a key role in patrol mission.

ACKNOWLEDGEMENT

I would like to thank '**Nabadwip Vidyasagar College**' Zoology department to give us such an opportunity to have a memorable excursion.

I am thankful to **Dr. Madhuban Datta, Dr. Suchismita Chatterjee, Dr. Nirmalya Das, Tapas Patra** for kindly guiding us towards an educational tour at Vishakhapatnam and surroundings including Indira Gandhi Zoological Park, amidst Kambalakonda reserve forest in Vishakhapatnam, Andhra Pradesh, India and R.K. marine beach ecosystem from 5th December to 10th December 2017.

I have gained a first-hand knowledge regarding the ex-situ conservation methods and witnessed the marine biodiversity at the beaches of Vizag. For which I will remain very grateful towards my teacher.

UNIVERSITY OF KALYANI

DEPARTMENT OF ZOOLOGY



CERTIFICATE

This is certifying that the excursion & project work on 'Biodiversity of The Marine Species' (05/12/2017 to 10/12/2017)' is carried out by **Mashum Arif Halsana**, B.Sc. (2nd year) Roll No. Reg. No:

of _____ under my supervision. I am allowing this project for the examination of B.Sc. in Zoology of the college.

Date:

Under guidance by

Dr. Madhuban Datta

Dr. Suchismita Chatterjee

Dr. Nirmalya Das

Zoology Department

Nabadwip Vidyasagar College

University of Kalyani

DEPARTMENT OF GEOGRAPHY
EDUCATIONAL EXCURSION, 2021 – 2022

LIST OF STUDENTS

| SL. NO. | NAME | GENDER | AGE | ID NUMBER | SEMESTER |
|---------|----------------------|--------|-----|-------------|----------|
| 1 | BIPASHA DEY | F | 19 | 12021GEOH01 | SEM - II |
| 2 | SHUBHAJIT MAJUMDAR | M | 19 | 12021GEOH22 | SEM – II |
| 3 | BIKRAM MANNA | M | 19 | 12021GEOH13 | SEM – II |
| 4 | KOYEL SAHA | F | 19 | 12021GEOH03 | SEM – II |
| 5 | DIPANKAR KUMAR MODAK | M | 19 | 12021GEOH16 | SEM - II |
| 6 | RAJIYA KHATUN | F | 19 | 12021GEOH28 | SEM - II |
| 7 | DEBI SAHA | F | 19 | 12021GEOH26 | SEM - II |
| 8 | SNEHA PRAMANICK | F | 19 | 12021GEOH29 | SEM - II |
| 9 | RAJU SEKH | M | 19 | 12021GEOH19 | SEM - II |
| 10 | RAKESH BISWAS | M | 19 | 12021GEOH20 | SEM - II |
| 11 | SNEHASHIS GHOSH | M | 19 | 12021GEOH24 | SEM - II |
| 12 | DEBAM SARKAR | M | 19 | 12021GEOH14 | SEM - II |
| 13 | DEBASMITA SEN | F | 19 | 12021GEOH02 | SEM - II |
| 14 | SWARNALI NANDI | F | 19 | 12021GEOH30 | SEM - II |
| 15 | JOYDEB KUNDU | M | 19 | 12021GEOH32 | SEM - II |
| 16 | ARDHENDU HALDAR | M | 19 | 12021GEOH12 | SEM - II |
| 17 | SRIJITA SAHA | F | 19 | 12021GEOH10 | SEM - II |
| 18 | SABNAM KHATUN | F | 19 | 12021GEOH08 | SEM - II |
| 19 | MEGHA PAL | F | 20 | 12020GEOH10 | SEM - IV |
| 20 | SUMANA PAL | F | 20 | 12020GEOH14 | SEM - IV |
| 21 | TUYA KUNDU | F | 20 | 12020GEOH17 | SEM - IV |
| 22 | LIJA GHOSH | F | 20 | 12020GEOH09 | SEM - IV |
| 23 | SUTAPA BASAK | F | 20 | 12020GEOH15 | SEM - IV |
| 24 | JAYASHRI ROY | F | 20 | 12020GEOH08 | SEM - IV |
| 25 | ISHA BISWAS | F | 20 | 12020GEOH06 | SEM - IV |
| 26 | SANGITA HALDAR | F | 20 | 12020GEOH13 | SEM – IV |
| 27 | RAKHI DAS | F | 20 | 12020GEOH11 | SEM - IV |

List of Teachers

| SL. NO. | NAME | DESIGNATION | GENDER | AGE |
|----------------|----------------|--------------------|---------------|------------|
| 1 | SHILPI MONDAL | SACT-I & HOD | F | 30 |
| 2 | FARUK BISWAS | ACADEMIC COUNSELOR | M | 27 |
| 3 | SAYANI SAHA | ACADEMIC COUNSELOR | F | 27 |
| 4 | MNAKSHI MONDAL | ACADEMIC COUNSELOR | F | 26 |

EDUCATIONAL TOUR ORGANIZED BY NABADWIP VIDYASAGAR COLLEGE

Nabadwip, Nadia, June 17, 2022: A field tour was organized by Department of Geography, Nabadwip Vidyasagar College on June 15-16, 2022 to visit Santiniketan and surroundings in Bolpur subdivision of Birbhum district in West Bengal, India according to our syllabus. The tour comprised students of BA/BSc Geography (Hons) accompanied by faculty members Smt Shilpi Mondal, Smt Sayani Saha, Md. Faruk Biswas, Smt Minakshi Mondal from department of Geography. All the students were directed to gather at waiting room of Nabadwip Dham Railway Station at 6 am to reach Bandel junction station for our express train. Principal of the college Dr. S K Roy wished all the students best and safe journey.

We started our journey at 8.32 am from Bndel junction Railway Station by MA TARA Express and reached Bolepur (Shantiniketan) Railway Station by 10.32 am of June 15. By 11.30 am the facilities of Lodge Manasi warmly welcome us in their Lodge. On the way to Kankalitala Mandir we had seen many places of Santiniketan (**visva bharti university campus from outside, chatim tola, Upsona Ghriho, Amar kutir, prakriti bhavan, Sona jhuri, Kopai River etc**). Then we reached at **Konkalitola mandir**.



Second day we visited some beautiful places of Shantiniketan one by one (**Melar math, Kala Bhaban, Bangladesh Bhavan, Local Handi craft Market, Deer Park, Surul Raj Bari etc**). We checked out from the hotel by 12 noon and then visited **Geetanjali Museum** . Then we reached in

Bolepur station to come back to Nabadwip by MAA Tara express. After this we came back to Nabadwip.

Totally this was an amazing experience for all of us. We all enjoyed the tour and took group photographs. We all had a safe and enjoyable journey with lots of information.

We all are thankful to our teachers and the college for taking us on this tour.

Main objectives of our field trip –

- To observe the cultural aspects of Shantiniketan..
- To visit Kopa river and river bank erosion by river Kopa.
- To visit badland topography .

Nabadwip Vidyasagar College
Department of Environmental Science
Excursion Photographs

2022, Sundarban



2020, Dooars, Boxa, Jayanti River West Bengal



2019, Lava, Rishop, Jhandi, Lataguri West Bengal



2018, Sillery Gaon, Icche Gaon, Kalimpong, West Bengal



2017 Lava, Kolakham, Boxa-Jayanti, West Bengal







Kisorimohanpur, West Bengal, India
VGV4+RGQ, Kisorimohanpur, West Bengal 743383, India
Lat 21.894713°
Long 88.506368°
22/06/22 08:00 PM



Purba Gurguria, West Bengal, India
Unnamed Road, Purba Gurguria, West Bengal 743383, India
Lat 21.960964°
Long 88.663725°
22/06/22 09:53 AM

NABADWIP VIDYASAGAR COLLEGE
DEPARTMENT OF ENVIRONMENTAL SCIENCE

EUCATIONAL TOUR- 2017

Location: Lava, Kolakham, Boxa-Jayanti, West Bengal

Date: 2nd January 2017- 7th January 2017

Student List

| Name | Year | Sex | Age |
|----------------------|-----------------|-----|-----|
| Sourav Banerjee | 3 rd | M | 21 |
| Subhankar Pathak | 3 rd | M | 21 |
| Pratap Ghosh | 3 rd | M | 21 |
| Tridib Ghosh | 3 rd | M | 21 |
| Shantanu Saha Roy | 3 rd | M | 21 |
| Rinku Ghosh | 3 rd | F | 21 |
| Sathi Das | 3 rd | F | 21 |
| Radhika Roy | 3 rd | F | 21 |
| Dipa Pal | 3 rd | F | 21 |
| Mousumi Bhattacharya | 3 rd | F | 21 |
| Anamika Saha | 3 rd | F | 21 |
| Anwasha Ghosh | 3 rd | F | 21 |
| Jahinur Khatun | 3 rd | F | 21 |
| Subrata Das | 2 nd | M | 20 |
| Saikat Mondal | 2 nd | M | 20 |
| Arpan Nandy | 2 nd | M | 20 |
| Arjun Duttabanik | 2 nd | M | 20 |
| Manishankar Maity | 2 nd | M | 20 |
| Moumita Biswas | 2 nd | F | 19 |
| Sharmistha Biswas | 2 nd | F | 19 |
| Aishwarya Das | 1 st | F | 19 |
| Subrata Ghosh | 1 st | M | 19 |
| Jannatulkuheli | 1 st | F | 19 |
| Subhojit Basak | 1 st | M | 19 |

EUCATIONAL TOUR- 2018

Location: Sillery Gaon, Icche Gaon, Kalimpong, West Bengal

Date: 12th January 2018- 15th January 2018

Student List

| Name | Year | Sex | Age |
|-------------------|-----------------|-----|-----|
| Subrata Das | 3 rd | M | 21 |
| Saikat Mondal | 3 rd | M | 21 |
| Arpan Nandy | 3 rd | M | 21 |
| Arjun Duttabanik | 3 rd | M | 21 |
| Manishankar Maity | 3 rd | M | 21 |
| Moumita Biswas | 3 rd | F | 20 |
| Sharmistha Biswas | 3 rd | F | 20 |
| Aishwarya Das | 2 nd | F | 20 |
| Subrata Ghosh | 2 nd | M | 20 |
| Jannatulkuheli | 2 nd | F | 20 |
| Subhojit Basak | 2 nd | M | 20 |
| Tanmoy Kundu | 1 st | M | 19 |
| Bikram Nandy | 1 st | M | 19 |
| Ankita Biswas | 1 st | F | 19 |
| Shreya Acharyya | 1 st | F | 19 |
| Raju Pal | 1 st | M | 20 |

EUCATIONAL TOUR- 2019

Location: Lava, Rishop, Jhandi, Lataguri, West Bengal

Date: 19th January 2019- 24th January 2019

Student List

| Name | Year | Sex | Age |
|-----------------------|-----------------|------------|------------|
| Aishwarya Das | 3 rd | F | 21 |
| SubrataGhosh | 3 rd | M | 21 |
| Jannatulkuheli | 3 rd | F | 21 |
| SubhojitBasak | 3 rd | M | 21 |
| TanmoyKundu | 2 nd | M | 20 |
| BikramNandy | 2 nd | M | 20 |
| Ankita Biswas | 2 nd | F | 20 |
| Shreya Acharyya | 2 nd | F | 20 |
| Raju Pal | 2 nd | M | 20 |
| Anirban Mitra | SEM-I | M | 19 |
| Moutusi Farhana Jangi | SEM-I | F | 19 |
| Rajdeep Singha Roy | SEM-I | M | 19 |
| Shaheen Hasan Dawan | SEM-I | M | 19 |

EUCATIONAL TOUR- 2020

Location: Dooars, Boxa, Jayanti River West Bengal

Date: 6th January 2020- 9th January 2020

Student List

| NAME | GENDER | AGE | YEAR |
|-----------------------|--------|-----|-----------------|
| Barnali Sarkar | F | 18 | SEM-I |
| Parija Mukherjee | F | 18 | SEM-I |
| Poushali Saha | F | 18 | SEM-I |
| Shreya Basak | F | 18 | SEM-I |
| Mahendra Murmu | M | 18 | SEM-I |
| Mrinal Tarafdar | M | 18 | SEM-I |
| Shobhan Ghosh | M | 18 | SEM-I |
| Soumojit Ganguly | M | 18 | SEM-I |
| Anirban Mitra | M | 19 | SEM-III |
| Moutusi Farhana Jangi | F | 19 | SEM-III |
| Rajdeep Singha Roy | M | 19 | SEM-III |
| Shaheen Hasan Dawan | M | 19 | SEM-III |
| Sreya Acharyya | F | 20 | 3 rd |
| Ankita Biswas | F | 20 | 3 rd |
| Bikram Nandi | M | 20 | 3 rd |
| Tonmoy Kundu | M | 20 | 3 rd |

EUCATIONAL TOUR- 2022

Location: Sundarban, West Bengal

Date: 21st June 2022- 23rd June 2022

Student List

| NAME | GENDER | AGE | YEAR |
|------------------|---------------|------------|-------------|
| Barnali Sarkar | F | 21 | SEM-VI |
| Parija Mukherjee | F | 21 | SEM-VI |
| Poushali Saha | F | 22 | SEM-VI |
| Shreya Basak | F | 21 | SEM-VI |
| Mahendra Murmu | M | 22 | SEM-VI |
| Akash Sil | M | 19 | SEM- IV |
| Arpan Ghosh | M | 19 | SEM- IV |
| Ayan Saha | M | 19 | SEM- IV |
| Rahul Singha | M | 19 | SEM- IV |
| Riya Biswas | F | 22 | SEM- IV |
| Soumya Dey | M | 19 | SEM- IV |
| Sangita Garai | F | 20 | SEM- IV |
| Satavisha Mitra | F | 21 | SEM- IV |
| Jaya Saha | F | 19 | SEM- II |
| Subharthi Dey | F | 18 | SEM- II |

| Session | Student's Name |
|----------------|---|
| 2017-18 | 1. Agniva Mukherjee 2. Shankha Subhra Ghosh 3. Dwipayana Talukdar 4. Bibhu Mondal 5. Anup Moitra 6. Souvik Chanda 7. Bikram Das 8. Priyabrata Biswas 9. Shahil Modal 10. Soumen Mondal 11. Suman Biswas 12. Mandira Mukhopadhyay 13. Tanushree Datta 14. Priya Saha 15. Ditsa Bhattacharya 16. Shewta Nandi 17. Paromita Ghosh 18. Chiranjit Ghosh 19. Ankita Ghosh 20. Snigdha Ghosh 21. Proгна Garai 22. Mousumi Basak 23. Debabrata Mahato |
| 2018-19 | 1. Agniva Mukherjee 2. Mahima Khatun 3. Arindam Kundu 4. Bibhu Mondal 5. Anup Moitra 6. Shilpi Ghosh 7. Doyel Ghosh 8. Bikram Das 9. Shahil Modal 10. Soumen Mondal 11. Ankita Dey 12. Swastika Kundu 13. Tanushree Biswas 14. Soumi Nath 15. Ditsa Bhattacharya 16. Shewta Nandi 17. Paromita Ghosh 18. Sangita Mondal 19. Saheli Biswas 20. Snigdha Ghosh 21. Suparna Karmakar |
| 2019-20 | 1. Samiul Islam Mondal 2. Mahima Khatun 3. Supriya Majhi 4. Rakesh Roy 5. Nuramin Mondal 6. Shilpi Ghosh 7. Doyel Ghosh 8. Biswarup Paul 9. Sakil Ahmed 10. Amit Mondal 11. Neha Modak 12. Swastika Kundu 13. Tanushree Biswas 14. Soumi Nath 15. Ditsa Bhattacharya 16. Subham Biswas 17. Paromita Ghosh 18. Sangita Mondal 19. Saheli Biswas 20. Snigdha Ghosh 21. Swastika Biswas 22. Supriyo Dey 23. Sagir Hossain 24. Mondira Mukhopadhyay |

| Session | Report |
|----------------|--|
| 2017-18 | On 1 st Feb, 2018 we gathered at Howrah station and boarded on Amarabati exp.. Next day morning we reached at Balasore. We reached to Panchlingeshwar by car on 2 nd February, 2018. We took rest and after breakfast we started collecting the plants. On the way we visited the one dam, Kuldiha forest thoroughly for some ecological study. Then we went to Chandipur Vanishing sea beach to study the aquatic plants. We ended up the tour on 4 th of Feb 2018 and reached to our college on 5 th Feb. 2018. The tour was very much successful with much knowledge. |
| 2018-19 | On 28 th Jan. 2019 we gathered at Nabadwip Dham station and boarded on Tista Torsa exp.. Next day morning we reached at Moynaguri station. We reached to Dooars by car on 29 th January, 2019. We took rest and after breakfast we started collecting the plants. On the way we visited the Bindu, Jhalong, forest thoroughly for some ecological study. Then we went to Jaldhaka to study plants. We ended up the tour on 31 st of Jan 2019 and reached to our college on 1 st Feb. 2019. The tour was very much successful. |
| 2019-20 | On 28 th Nov. 2019 we gathered at Nabadwip Dham station and boarded on Tista Torsa exp.. Next day morning we reached at NJP station. We reached to Peiling by car on 29 th November, 2019. We took rest and after breakfast we started collecting the plants. On the way we visited the local sight seeing like khechepedi lake and many more thoroughly for some ecological study. We ended up the tour on 1 st of December 2019 and reached to our college on 2 nd Dec. 2019. The tour was very much successful with much knowledge. |





2019_Peiling



2019_Peiling



2019-peiling

Tour report

Dept. of Botany

2017-2018 01.02.2018 to 05.02.2018 Kuldiha WLS and surroundings

The main objectives of our study tour aimed at the study of vegetation pattern of that particular ecosystem and also to study the nature of their growth.

Kuldiha Wildlife Sanctuary (KWLS) designated on 04 January 1984; is situated in the southern part of the district of Balasore of Odisha State, lies between 21° 20' 31" to 21° 29' 08" N latitude and 86° 25' 23" to 86° 44' 50"E longitude (Plate 1). The sanctuary spreads across an area of 272.75 sq kms. The forests of the region cover the Nato hills and the Sukhupata hills merging with the Similipal National Park. It lies close to Nilagiri forest towards north and Mayurbhanj forest in northwest.

Extensive surveys were carried out during the period of our tour and documented the ethnobotanical uses of the plants of the area by the local communities. Collected plant specimens were identified with the help of published regional Floras . Voucher specimens of the collected medicinal plants have been deposited in the herbarium of our department. The major plants are *Dillenia aurea*, *Ziziphus funiculosa*, *Diospyros malabarica*, *Desmos chinensis*, *Diospyros melanoxylon* *Cordia monoica* etc. Finally we returned with all preserved materials .

2018-2019 28.01.2019–01.02.2019 Dooars and surrounding

Our educational tour at dooars is primarily based on Gorumara reserve forest and also Suntalekhola along with bank of Murti river. We took an attempt to compare the vegetation pattern this time with the vegetation of sea level. We also measured the ecological density and forest cover. Dooars is mostly known for its flora and fauna. The lush green forest preserves large variety of different endangered plants . The Dooars or Duars are the floodplains and foothills of the eastern Himalayas in West Bengal around Bhutan. Dooars or Duars means door in Assamese, Nepali, Mathili, Bhojpuri and Bengali languages. The region consists of an area of 8,800 sq km. Along with tribal population viz. Bodo, Rabha, Mech, Toto, Koch and Rajbangshi tribe, a large number of Bengali and Nepali communities also populate the area. The study was conducted randomly in different places of Dooars area like Chalsa, Lataguri and Chapramari for surveying and data collection. Information on curative values as well as religious values of different plant species were gathered through personal interview with people of the locality. The local names of plants and folk lore claims for the respective uses were verified by showing the same specimen to the elder people who have the clear understanding. Moreover, it was found that Some of the plants like *Acacia arabica*, *Artemisia vulgaris* and *Azadirachta indica* are used by the local people to eliminate evil spirits This study reveals that the Duars people have high possession of knowledge on medico – religious plants. They use many plants for medicinal purposes as well as in their different rituals. This gathered information on medico – religious plants need a thorough phytochemical investigation. Some of the major plants of dooars are -*Gynocardia odorata*, *Hydnocarpus kurzii*, *Saurauia napaulensis*, *Alstonia scholaris*, *Holarrhena pubescens*, *Areca catechu*, *Oroxylum indicum*, *Cordia grandis*, *Cycas pectinata*, *Acacia auriculiformis* etc. Besides these a number of ferns and bryophytes were also collected. Our tour ended with preservation of herbarium sheets and field records.

2019-2020

28.11.2019–02.12.2019

Pelling and surrounding

Each and every educational tour of Department Botany includes field study , collections of plant materials, preparation of herbarium sheets, etc. This time our tour was in higher altitude and we analyzed quadrats to measure the minimum size of it. A number of bryophytes are collected this time along with pteridophytes.

Pelling is a town in the district of West Sikkim with an altitude of 6100 ft. Pelling is about 133 km away from Siliguri and 125 km from Gangtok and is well connected by bus and jeep services. The town is located at a distance of 10 km from the district headquarters of Ghezing. It attracts most of the visitors for its representative status in history, nature and culture of the state. Most of the people of Pelling are Buddhists and speak the Sikkimese language. Situated at a high altitude, Pelling offers good view of entire mountain ranges including the Kaktang, Kumbhakarna, Rathong, Kabru, Dom, Kanchenjunga, Mount Pandim, Zopuno, Shimbho, Narsing, Siniyalchu and others. Pelling also forms the base from where trekkers and other peripatetic adventurers undertake the strenuous and arduous treks in West Sikkim. Regular jeeps connect Pelling to the towns of Jorethang, Kalimpong and Namchi. The land around Pelling is still a virgin territory and is surrounded by alpine vegetation, with numerous waterfalls lining the hillside.

Khecheopalri Lake is considered one of the sacred lakes of Sikkim. The lake remains hidden in the rich forest cover. This place is popular among trekkers. Here we noticed the presence of *Spagnum* bed an important bryophyte that are used as peat and medicine as well. The sacred lake lies in a depression surrounded by prayer flags and forested hills. By the lakeshore is the small Lepcha village of Tsojo, and about 1.5km above the lake is the Khecheopalri Gumpa. This was the second capital of the erstwhile kingdom of Sikkim after Yuksom. Till the year 1814 A.D., the king of Sikkim had ruled the state from this place. Presently, the Rabdentse ruins lie hidden from the main road at a walking distance from Pelling and the Pemayangtse Monastery. Students are enjoyed the scenic view from the top of the ruin scanning across deep valley to the mystic heights of Kanchenjunga ranges. Other proximate locations to Pelling are Yuksom, Rinchenpong, Dzongri etc. we prepared necessary herbarium and all documents were kept in the field record book. We returned with full satisfaction.

Department of Chemistry
SYLLABUS of Project paper DSE-4 SEM-VI (Hons)

| | | | | |
|-----------|---|-------------|---|---|
| VI | Core Course-13 (Theory) | CHEMHT-13 | Inorganic - V | 4 |
| | Core Course-13 (Practical) | CHEMHP-13 | Inorganic - V | 2 |
| | Core Course-14 (Theory) | CHEMHT-14 | Organic-V | 4 |
| | Core Course-14 (Practical) | CHEMHP-14 | Organic - V | 2 |
| | Discipline Specific Elective-3 (Theory) | CHEMHTDSE-3 | Advanced Physical Chemistry | 4 |
| | Discipline Specific Elective- 3(Practical) | CHEMHPDSE-3 | Advanced Physical Chemistry | 2 |
| | Discipline Specific Elective-4 (Theory) | CHEMHTDSE-4 | Dissertation | 4 |
| | Discipline Specific Elective- 4 (Practical) | CHEMHPDSE-4 | Project work Presentation (Power point) | 2 |

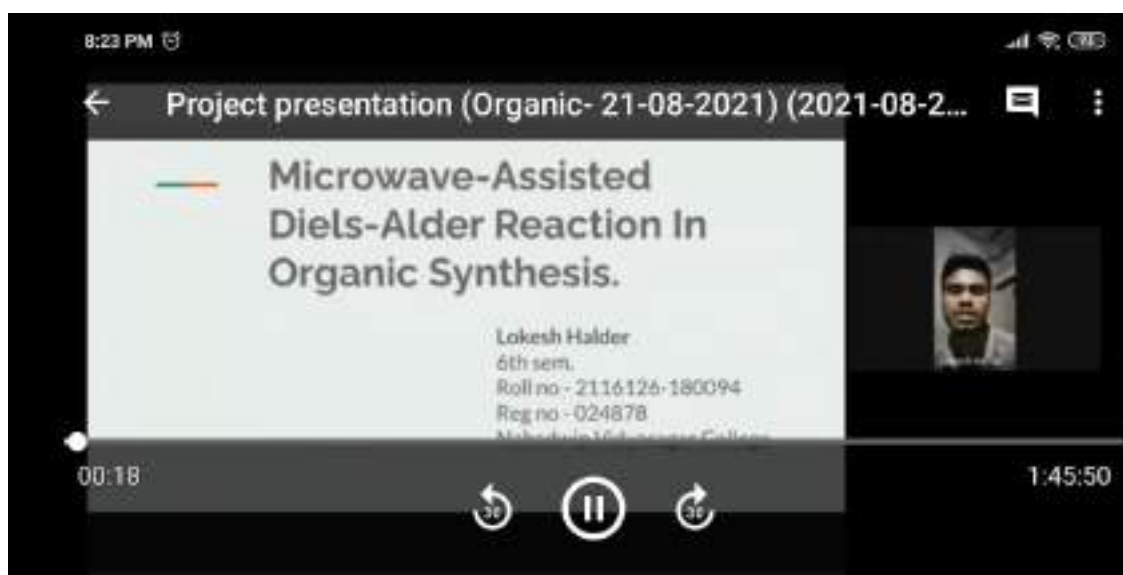
* B.Sc. (Honours) with Chemistry students should select their general electives courses, any two from Physics, Mathematics and any branch of Life Sciences disciplines.

| | | |
|--|-------------------|-----------------|
| Chemical Analysis: butler, Freeman (2007) Chapters 3-5. J. Hoggie, J. H. Physical Chemistry on a Microcomputer. Little Brown & Co. (1985) | | |
| CHEMHTDSE-4 | Theory: | 4 Credit |
| Project Work | | |
| A dissertation has to be prepared on consultation with teachers/mentors on a topic from any area of Chemistry. During examination a thorough viva-voce will be conducted by the examiners/adjudicators. The dissertation will be evaluated on the basis of written documents submitted by the candidate, originality and importance. | | |
| CHEMHPDSE-4 | Practical: | 2 Credit |
| Project Work | | |
| A power point presentation has to be prepared and a short oral presentation will be considered for continuous evaluation. A PDF file/print copy of the power point will be required to be submitted. | | |

**Details of DSE-4 Projects of SEM-6 (H) students of the Dept. of Chemistry
SESSION(2020-2021)**

| Sl.No. | Name of the students | Title of the Projects |
|--------|----------------------|--|
| 1 | Damayanti Roy | Mosquito Repellents and their structure Diversity |
| 2 | Nabanita Chakrabarty | Nucleus Independent Chemical Shift as an Aromaticity Tool |
| 3 | Agniva Bagchi | Removal of Chromium from waste water by low cost natural adsorbents |
| 4 | Bikram Mondal | Removal of Malachite Green by agricultural Waste : A short review |
| 5 | Dibyendu Debnath | Bioadsorbents for remediation of Mercury : Current status and their future prospect |
| 6 | Lokesh Halder | Microwave assisted Diels Alder Reactions In Organic Synthesis |
| 7 | Rupam Dey | Synthetic nanoparticles and nanocomposites for efficient removal of methyl orange: Kinetics, isotherm and thermodynamic studies |
| 8 | Shibam Pal | Chemistry of Indole Alkaloids |
| 9 | Shibam Saha | Arsenic Removal by Modified Activated Carbon |
| 10 | Somnath Parui | Evans Chiral Auxiliaries In Asymmetric Synthesis |

Project presentation :



SESSION (2021-2022)

| Sl. No | Name of the Students | Title of the projects |
|--------|----------------------|---|
| 1 | Debolina Dutta | Studies on some quinolone alkaloids : Natural occurrence, Isolation, Synthesis and Biological activities |
| 2 | Jayoshri Mallick | Groundnut shell as Adsorbent of Dyes |
| 3 | Khairunnesha Khatun | Thermodynamic Properties of Donor-Acceptor complex |
| 4 | Koyel Dalal | Advances in the Sonochemical Reactions of Aldehydes |
| 5 | Nilanjana Das | A study of Aldol Reactions of Aldehydes and Ketones under solvent free conditions |
| 6 | Shreya Deb | Activated Carbon from Groundnut shell as Adsorbent |
| 7 | Aparup Bose | Determination of water quality parameters of selected railway station |
| 8 | Bijoy Ghosh | Study of isotherm of Malachite Green adsorption onto activated carbon loaded cellulose composite bead |
| 9 | Bitan Dey | Study of Kinetics of Malachite Green adsorption onto activated carbon loaded cellulose composite bead |
| 10 | Kajal Mallick | Study of Isotherm of Methylene Blue adsorption on activated carbon loaded cellulose composite bead |
| 11 | Monotosh Biswas | Cyclodimerization Reaction for synthesis cyclobutanes and cyclobutenes |
| 12 | Saikat Raut | Study of Kinetics of methylene blue adsorption on activated carbon loaded cellulose composite bead |
| 13 | Sourav Das | Studies on some Naturally occurring Drugs and Potential Drug Intermediates |

NOTICE



Nabadwip Vidyasagar College

(Affiliated to University of Kalyani & Registered under 2(f) & 12 (B) of UGC Act.

Re-accredited by NAAC in 2nd cycle with Grade 'B')

NABADWIP, NADIA, West Bengal, Pin-741302

ESTD-1942

Website: www.nvccollege.in

E-mail: nvccollege1942@gmail.com

NOTICE

B.Sc. Semester-VI(HONS) Chemistry Practical Examination, University of Kalyani, 2022, will be held as per the following schedule. All candidates are asked to report at the examination centre along with their Laboratory Note books and Admit cards at least 15 minutes before the commencement of the examination.

| Paper | Date and Time | Roll. Nos. |
|--------|-----------------------------|---|
| CC-13P | 27.6.22, 11am-3.00pm | 2116126-1924710,713,714,715,722,740,757, 769,774,785,790,817,833 |
| Cc-14P | 28.6.22, 11am-3.00pm | 2116126-1924710,713,714,715,722,740,757, 769,774,785,790,817,833 |
| DSE-3P | 29.6.22, 11am-3.00pm | 2116126-1924710,713,714,715,722,740,757, 769,774,785,790,817,833 |
| DSE-4 | 30.6.22, 11-30 am - 3-30 pm | 2116126-1924388,769,774,790,817,833 785 |
| DSE-4 | 4.7.22, 11-30 am - 3-30 pm | 2116126-1924710, 713,714,715,722,740,757 |

Mausumi Roy Chowdhury
Mausumi Roy Chowdhury
(Dept. of Chemistry) 24/6/22

Countersigned

P. S. 24.06.22

Principal

Nabadwip Vidyasagar College

Principal

Project presentation by students





Nucleus Independent Chemical Shift as an Aromaticity Tool

A Thesis presented by

Ms. Nabanita Chakarabarty

Roll number: 2116126- 180019

Under the Guidance of

Dr. Soma Seth (Duley)

Nabadwip Vidyasagar College, Nabadwip

Nadia-741302

4. Synthetic nanoparticles and nanocomposites for efficient removal of methyl orange: Kinetics, isotherm and thermodynamic studies

Project by Rupam Dey
DSE4 for 6th Semester
Roll no:2116126-180122
Reg. No:024881
SESSION:2018-19
Nabadwip Vidyasagar College

[Synthetic nanoparticles and nanocomposites for efficient removal of methyl orange: kinetics, isotherm and thermodynamic studies](#)

Abstract:

A batch equilibrium system has been used to investigate the adsorption of methyl orange (MO) on NiO or CuO nanoparticles (NPs). The effects of experimental conditions such as initial concentration, agitation time, solution pH and temperature were examined. Langmuir and Freundlich's models were used for determining the adsorption parameters at three different temperatures. It was observed that the Langmuir model fits well with the experimental adsorption data. The pseudo first-order, second-order and intra-particle diffusion models were applied to investigate the kinetic data. The obtained results indicate that experimental kinetics data of NiO and CuO NPs were only well explained by the second-order model. It was found that the adsorption capacities of NiO NPs are higher than that of CuO NPs for each temperature. However, CuO NPs has higher adsorption rate than that of NiO NPs. The thermodynamic parameters (ΔH° , ΔS° , and ΔG°) were determined and their values indicate that the adsorptions of MO on NiO and CuO NPs are endothermic and spontaneous processes. Thermodynamics parameters also confirm that the adsorption of MO is chemical and physical adsorption on the surfaces of NiO and CuO NPs,

• Introduction:

Methyl orange is a pH Indicator frequently used in titration because of its clear and distinct colour variance at different pH values.

REMOVAL OF MALACHITE GREEN BY AGRICULTURAL WASTE: A SHORT REVIEW

ABSTRACT:

Color removal from wastewater has been a matter of concern, both in the aesthetic sense and health point of view. Color removal from textile effluents on a continuous industrial scale has been given much attention in the last few years, not only because of its potential toxicity, but also mainly due to its visibility problem. There have been various promising techniques for the removal of dyes from wastewater. However, the effectiveness of adsorption for dye removal from wastewater has made it an ideal alternative to other expensive treatment methods. In this review, an extensive list of sorbent literature has been compiled. The review evaluates different agricultural waste materials as low-cost adsorbents for the removal of dyes from wastewater. The review also outlines some of the fundamental principles of dye adsorption on to adsorbents.

INTRODUCTION:-

Malachite green is an organic compound. Chemical formula of malachite green is a $C_{23}H_{25}ClN_2$ (chloride). Malachite green is prepared by the condensation of benzaldehyde and dimethylaniline to give leuco malachite green (LMG): $C_6H_5CHO + 2 C_6H_5N(CH_3)_2 \rightarrow C_6H_5CH(C_6H_4N(CH_3)_2)_2 + H_2O$. the dye occurs as lustrous green crystals soluble in water and in alcohol. It is used as a

Project submitted by Bikram Mandal

Bioadsorbents for remediation of Mercury: Current status and their future prospect

Project by Dibyendu Debnath

DSE4 for 6th Semester

Roll no:2116126-180079

Reg. No:024877

SESSION:2018-19

Nabadwip Vidyasagar College

Arsenic Removal by Modified Activated Carbon

An undergraduate project submitted by

Shibam Saha

Roll-2116126 No-180135

Reg. No-024883 of 2018-2019

DSE-4 Project

Department of Chemistry
Nabadwip Vidyasagar College
Nadia, WB

CHEMISTRY OF INDOLE ALKALOIDS

Shibam Pal

Regd no-024882

Roll no- 2116126-180134

Session-2018-2019

Paper-DSE-P-04

Mosquito Repellents and Their Structure Diversity

An undergraduate project submitted by

Damayanti Roy

Roll-2116126 No-180007

Reg. No-024868 of 2018-2019

DSE-4 Project

Department of Chemistry
Nabadwip Vidyasagar College
Nadia, WB

NABADWIP VIDYASAGAR COLLEGE

DEPARTMENT OF CHEMISTRY

SOMNATH PARUI

ROLL NO:- 2116126-180138

REG.NO:- 024884

SESSION:-2018-19

SUB:-DSE-4

NABADWIP VIDYASAGAR COLLEGE

DEPARTMENT OF CHEMISTRY

DSE-4 PROJECT

LOKESH HALDER

ROLL NO - 2116126-180094

REG NO - 024878

SESSION - 2018 - 2019

REMOVAL OF CHROMIUM FROM WASTE WATER BY LOW COST NATURAL ADSORBENTS

ABSTRACT:- In the study of adsorption of chromium from wastewater by low cost natural adsorbent. The main topic is to discuss about the removal of chromium chromium can be found in two States chromium 3 and chromium 6 in the earth, as it is known to all that chromium is very harmful for human health and other lives. The main sources of mixing chromium in water are factories and industries ,such as :-leather tanning wood preservation etc. From these factories chromium directly comes into the water and it harms the life of human and other animals. The polluted water is cause of many serious diseases for human and other animals. So there are many kind of adsorbents which can help to remove the chromium from water and the special factors of these adsorbents are they are natural and inexpensive in price. So we should take care about that project if we have to lead a better life.

Project submitted by Agniva Bagchi

GROUNDNUT SHELL AS ADSORBENT OF DYES

PROJECT REPORT

AN UNDER GRADUATE PROJECT

SUBMITTED BY

JAYOSHRI MALLICK

DATE OF SUBMISSION - 02/07/22

B.SC.HONOURS 6TH SEMESTER EXAMINATION

ROLL-2116126 NO-1924713

REGISTRATION NO-024585

SESSION-2019-20

DEPARTMENT OF CHEMISTRY

NABADWIP VIDYASAGAR COLLEGE

Project Report

An undergraduate project submitted by-

SHREYA DEB

Date of submission : 02/07/2022

Bsc honours 6 th semester examination, 2022

ROLL NO : 2116126-1924740

REG NO : 024590 of 2019-20

Paper – DSE 4

DEPARTMENT OF CHEMISTRY
NABADWIP VIDYASAGAR COLLEGE
NABADWIP , NADIA , WEST BENGAL

**A STUDY ON ALDOL REACTIONS OF
ALDEHYDES AND KETONES UNDER
SOLVENT FREE CONDITIONS**

PROJECT REPORT

AN UNDER GRADUATE PROJECT SUBMITTED BY

NILANJANA DAS

DATE OF SUBMISSION : 02/07/2022

B.SC. HONOURS 6TH SEMESTER EXAMINATION, 2022

ROLL NO. :- 2116126-1924722

REGISTRATION NO.:- 024588 OF 2019-20

DEPARTMENT OF CHEMISTRY

NABADWIP VIDYASAGAR COLLEGE

NABADWIP ,NADIA , WEST BENGAL

**STUDIES ON SOME QUINOLINE
ALKALOIDS; NATURAL OCCURENCE
ISOLATION, SYNTHESIS AND
BIOLOGICAL ACTIVITIES.**

KALYANUNIVERSITY

NABADWIP VIDYASAGAR COLLEGE

PROJECT SUBMITTED BY :DEBOLINA DUTTA

DATE OF SUBMISSION: 02.07.2022

BSC HONOURS 6TH SEM EXAMINATION

ROLL NO :2116126 1924710

REG : 024584

**SUBJECT : CHEMISTRY
DES 4**

PAPER :

Studies on Some Naturally Occurring
Drugs and Potential Drug Intermediates



Project submitted by Sourav Das

THERMODYNAMIC PROPERTIES OF DONOR-ACCEPTOR COMPLEX

AN UNDERGRADUATE PROJECT SUBMITTED BY

KHAIRUNNESHA KHATUN

ROLL : 2116126 NO : 1924714

REG NO : 024586, OF 2019-2020

Date of Submission : 02/07/2022

DSE-4 PROJECT

DEPARTMENT OF CHEMISTRY

NABADWIP VIDYASAGAR COLLEGE

NABADWIP, NADIA, W.B

**“Study of isotherm of malachite green adsorption
onto activated carbon loaded cellulose composite bead”**



University of Kalyani

Project Report

An Undergraduate Project Submitted By-

Bijoy Ghosh

Date of Submission : 02/07/2022

B.Sc. Honours 6th Semester Examination, 2022

Roll No.: 2116126 - 1924769

Registration No.: 024593 of 2019-20

Department of Chemistry

Nabadwip Vidyasagar College

Nabadwip, Nadia, West Bengal, 741302



**“Study of kinetics of malachite green adsorption
onto activated carbon loaded cellulose composite bead”**



University of Kalyani

Project Report

An Undergraduate Project Submitted By-

Bitan Dey

Date of Submission : 02/07/2022

B.Sc. Honours 6th Semester Examination, 2022

Roll No.: 2116126 - 1924774

Registration No.: 024594 of 2019-20

Department of Chemistry

Nabadwip Vidyasagar College

Nabadwip, Nadia, West Bengal, 741302

Determination of water quality parameters
of selected railway station of



University of Kalyani

Project Report

An Undergraduate Project Submitted By-

APARUP BOSE

Date of Submission : 02/07/2022

B.Sc. Honours 6th Semester Examination, 2022

Roll No.: . 2116126-1924757

Registration No.: **024592**

Department of Chemistry

Nabadwip Vidyasagar College

Nabadwip, Nadia, West Bengal, 741302

Study of kinetics of methylene blue adsorption on activated carbon loaded cellulose composite bead:



UNIVERSITY OF KALYANI

Project Report

An Undergraduate Project Submitted By -

SAIKAT RAUT

Date of Submission: 02/07/2022

B.Sc. Honours 6th Semester Examination, 2022

Roll No.:- 2116126-1924817

Registration No.:- 024599 of 2019-20

DEPARTMENT OF CHEMISTRY

NABADWIP VIDYASAGAR COLLEGE,

Nabadwip, Nadia, West Bengal, 741302

**"STUDY OF ISOTHERM OF METHYLENE BLUE ADSORPTION ON
ACTIVATED CARBON LOADED CELLULOSE COMPOSITE BEAD"**



University of Kalyani

Project Report

An Undergraduate Project Submitted By-

Kajal Mallick

Date of Submission : 02/07/2022

B.sc Honours 6th Semester Exzmination,2022

Roll No. :- 2116126 - 1924785

Reg No. :- 024596 of2019-2020

**Department of Chemistry
Nabadwip Vidaysagar College
Nabadwip,Nadia,West Bengal, 741302**

**CYCLODIMERIZATION REACTION FOR
SYNTHESIS OF CYCLOBUTANES AND
CYCLOBUTENES**

PROJECT REPORT

AN UNDER GRADUATE PROJECT SUBMITTED BY-

MONOTOSH BISWAS

DATE OF SUBMISSION : 02/07/2022

B.SC. HONOURS 6TH SEMESTER EXAMINATION ,2022

ROLL NO.:-2116126-1924790

REGISTRATION NO.:-024597 OF 2019-20

DEPARTMENT OF CHEMISTRY

NABADWIP VIDYASAGAR COLLEGE

NABADWIP , NADIA, WEST BENGAL

Nabadwip vidyasagar College

Department of chemistry

A project Submitted for DSE-4 Project

Koyel Dalal

Roll No:- 2116126-1924715

Reg.No:- 024587

Session:-2019-2020

Sub:-DSE-4

Department of Computer Science

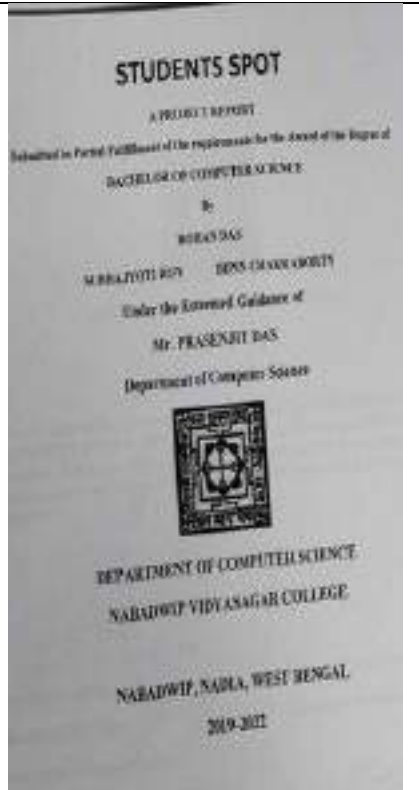
Nabadwip Vidyasagar College

Participant List in Project Work


Session- 2019-2022

Sem- 6th

Year-2022

| Paper Code | Project Title | Participant's Name | Participant's Reg No. | Supporting Documents |
|------------------|---------------|---|------------------------------|---|
| UG-H-DSE-PRO-604 | Students Spot | Rohan Das, Subhajyoti Roy, Bipin Chakraborty | 024607, 024609, 024605 |  <p>The image shows the cover page of a project report. The title is 'STUDENTS SPOT' in large, bold, black letters. Below the title, it says 'A PROJECT REPORT' in smaller letters. Further down, it states 'Submitted in Partial Fulfillment of the requirements for the Award of the Degree of BACHELOR OF COMPUTER SCIENCE'. The authors' names are listed: 'By: ROHAN DAS, SUBHAJYOTI ROY, BIPIN CHAKRABORTY'. Below the names, it says 'Under the Esteemed Guidance of Mr. PRASENJI DAS, Department of Computer Science'. There is a small square logo or emblem in the center. At the bottom, it reads 'DEPARTMENT OF COMPUTER SCIENCE, NABADWIP VIDYASAGAR COLLEGE, NABADWIP, NADIA, WEST BENGAL, 2019-2022'.</p> |

| | | | | |
|------------------------------|---------------------|---|---------------------------------------|--|
| | | | |  |
| <p>UG-H-DSE- PRO-604</p> | <p>Cryptography</p> | <p>Aditi Mitra, Ankita Bairagi, Arijit Saha</p> | <p>024601, 024602, 024603</p> |  |

| | | | | |
|------------------------------|---|-------------------------------------|---------------------------|--|
| <p>UG-H-DSE- PRO-604</p> | <p>Impurities Detection From Rice Grain Mixture</p> | <p>Ayan Mondal Souvik Modak</p> | <p>024608, 024604</p> |  <p>The image shows two documents. The top document is a 'Certificate of Approval' with several signatures and blue circular stamps. The bottom document is a 'PROJECT REPORT' titled 'IMPURITIES DETECTION FROM RICE GRAIN MIXTURE'. It lists the authors as Ayan Mondal and Souvik Modak, and is submitted to the Department of Chemical Engineering at IIT Kharagpur. The report includes a logo of IIT Kharagpur at the bottom.</p> |
|------------------------------|---|-------------------------------------|---------------------------|--|

FOR THE YEAR 2021 (6TH SEM)

SUPERVISED BY **JOYDIP DASGUPTA**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|--|--------------------|----------------------------|
| Arnab Saha | Use of Visual E -Content in Commerce Teaching - A Case Study of 'Scam -1992 | 1116126-180022 | 025126 |
| Rahul Debnath | Assessment of Financial frauds: A Study on Emerging issues among Private vs Public Sector Banks in India | 1116126-180017 | 025142 |
| Satyam Debnath | Working Capital Management Efficiency: A study on the Indian Cement Industry | 1116126-180022 | 025147 |
| Sougata Debnath | Performance of Life Insurance Corporation of India in the Pre and Post Liberalization Era | 1116126-180023 | 025148 |
| Soumajit Adhikary | Annual Reports of Arvind Mills and Bombay Dyeing | 1116126-180025 | 025150 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY **JOYDIP DASGUPTA**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Debashis Saha | Cryptocurrency– an overview” | 1116126-1924855 | 024828 |
| Ripan Das | Ecommerce in India-pre and post covid scenario | 1116126-1924862 | 024835 |
| Ranajit Dhar | কোভিড-১৯ এর ফলে শিক্ষা ব্যবস্থায় অনলাইন শিক্ষার প্রভাব | 1116126-1924860 | 024833 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY **SIBA PRASAD CHAKRABARTI**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|---|--------------------|----------------------------|
| Aniket Mahajan | Accounting Ratio Analysis | 1116126-1924852 | 024825 |
| Debanshu Pal | A Study on Perception about Mutual Fund in the District of Nadia | 1116126-192854 | 024827 |
| Biswajit Saha | A study of Customer Awareness on E Banking in the District of Nadia | 1116126-1924853 | 024826 |

FOR THE YEAR 2021 (6TH SEM)

SUPERVISED BY **SIBA PRASAD CHAKRABARTI**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|--|--------------------|----------------------------|
| Biton Kirtania | GST | 1116162-180005 | 025130 |
| Rana Debnath | Working Capital Management | 1116162-180018 | 025143 |
| Sourav Pal | Online banking | 1116162-180027 | 025152 |
| Netai Dey | Working Capital Management of Cooperative Bank | 1116162-180014 | 025139 |
| Soujas roy | Working Capital Management of Punjab National Bank | 1116162-180024 | 025149 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY TAPAN KUMAR SAMANTA

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Md Sohara Hussain | The Impact of Capital Budgeting in Private Sector | 1116126-1924857 | 024830 |
| Gourav Das | Cash Flow Statement in a Financial Institution | 1116126-1924856 | 024829 |
| Rijan Debnath | The Impact of Dividend Policy on Investment | 1116126-1924861 | 024834 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY AMIT KUMAR CHAKRABARTY

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Suvrajit Mondal | A Study on Relationship between Sensex and Share Price of SBI. | 1116126-1924868 | 024841 |
| Ritam Karmakar | A Study on Students Online Buying Behaviour influenced by Facebook Advertisement. | 1116126-1924863 | 024826 |
| Sanjoy Adhikary | An appraisal of Mutual Fund Investor of Nadia District | 1116126-1924866 | 024839 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY AMIT KUMAR BISWAS

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Sushovan Saha | A study on customer's perception on Online Banking in the district of Nadia | 1116126-1924869 | 024842 |

List of Student participants in the excursions organised by the Department of Chemistry during the period 2017-2022

| Year | Name of the students |
|-------------|---|
| 2017-2018 | Saborni Biswas, Puja Debnath, Jayeeta Roy, Kishore Majumder, Tanmoy Debnath, Rimpa Chakraborty, Priya Sarkar – students of 3 rd year Hons Samrat Debnath -- student of Chemistry General |
| 2018-2019 | Somnath Parui, Lokesh Halder, Damayanti Roy, Shibam Pal – students of 1st Semester Hons Aroj Ali Mallick, Sumanta Mallick, Ashique Mollah -- students of 2 nd year Hons |
| 2019-2020 | Somnath Parui, Lokesh Halder, Damayanti Roy, Shibam Pal -- students of 3 rd Sem. Hons. Aroj Ali Mallick, Sumanta Mallick, Ashique Mollah, Soumi Chatterjee, Satyam Saha, Subhojit Ghosh, Sayan Dutta -- students of 3 rd year Hons. |
| 2020-2021 | ----- |
| 2021-2022 | Shreya Deb, Nilanjana Das, Jayashri Mallick, Saikat Raut, Monotosh Biswas, Aparup Bose, Bitan Dey --- students of 6 th Sem Hons. Pritam Sen, Tiyaasha Barman, Saikat Ghosh, Swarnavo Mondal, Dwip Das, Sandip Das -- students of 4 th Sem Hons. Mizanoor Rahaman, Pritam Kumar Basak -- students of 2 nd Sem Hons. |

A short report on the excursion organized by the Department of Chemistry

In the session 2017-2018

Destination of tour: Digha

Duration of tour: 11.01.18-13.01.18

Members participated in the tour ---

Mr. P. Sarkar, Dr. B. Chatterjee , Dr. S. Seth (Duley), Dr. M. Roychowdhury. (**Teachers**)
Saborni Biswas, Puja Debnath, Jayeeta roy, Kishore majumdar, Tanmoy Debnath, Rimpa Chakraborty, Priya Sarkar (III Yr Hons) and Samrat Debnath (Chem. General) (**Students**)

Significance of the tour --- The spectacular view of Bay of Bengal and visit to the **Space and Astronomy Centre** made the tour enjoyable and significant.



A short report on the excursion organized by the Department of Chemistry

In the session 2018-2019

Destination of tour: Ghatshila and Jamshedpur

Duration of tour: 31.1.19 - 3.2.19

Members participated in the tour ---

Mr. P. Sarkar, Dr. B. Chatterjee , Dr. S. Seth (Duley), Dr. M. Roychowdhury. (**Teachers**)
Somnath Parui, Lokesh halder, Damayanti Roy, Shibam Pal (**students of B.Sc.Hons.Ist Semester**)
Aroj Ali mallick, Sumanta mallick, Ashique Mollah (**students of B.Sc.2nd year Hons**)

Significance of the tour ---

The tour at Ghatshila and Jamshedpur has got undoubtedly a good deal of significance from educational specially from chemical point of view, as both these places are famous for many well-known industrial factories like the factory of Hindustan Copper Limited on the bank of the river Subarnarekha at Ghatshila and Tata Steel Factory at Jamshedpur etc. Ghatshila is also a mine-centered town with several mines of Hindustan Copper Limited. Our students visited those places with great endeavour. Although they were not permitted to visit inside these factories or mines but exploration of these areas along with the vivid description on the process of extraction of metallic copper from copper ore and the process of steel manufacture by some of the workers of these factories evoked a great interests among them as these enriched sufficiently their text based knowledge in relevant areas. The most important aspect of this tour was the sample collection for chemical analysis which is an indispensable part of practical chemistry. So our students collected the sample ore of copper from Surda Copper Mine, one of the mines in Ghatshila. They also collected water samples from the dams at Galudih, Burudih, Chandil and Dimna . Dimna lake is an artificial lake created by Tata Steel for conservation of water at about 8 km away from the city of Jamshedpur. It is one of the main sources of drinking water in this city. Chandil and Galudih dams are constructed on the river Subarnarekha. Soil samples were also collected from some hillocks such as Chitrakut and Phuldungri.

Apart from the chemical interest, the tour bears another fold of significance in wider sense. The panoramic view of nature with hills, greeneries of forests, lakes and the river Subarnarekha charmed and nourished our minds specially of our students who have to undergo the pressure of huge syllabus, daily classes and examinations etc. throughout the year. In this connection it is also mentionable that the spiritual and peaceful ambience, disciplined systems, cordial reception and good advices of the saints of Ghatshila Ramakrishna Math where we stayed during the tour are obviously great lessons as well as inspirations to all of us for future life.



A short report on the excursion organized by the Department of Chemistry

In the session 2019-2020

Destination of tour: Darjeeling

Duration of tour: 21.1.20 – 25.1.20

Members participated in the tour ---

Prof. P. Sarkar, Dr. B. Chatterjee, Prof. Monisha Das, Dr. M. Roychowdhury (**Teachers**)
Somnath Parui, Lokesh Halder, Damayanti Roy, Shibam Pal (**students of B.Sc.Hons.3rd Semester**)
Aroj Ali mallick, Sumanta Mallick, Ashique Mollah, Soumi Chatterjee, Satyam Saha, Subhojit Ghosh, Sayan Dutta, (**students of B.Sc.3rd year Hons**)

Significance of the tour ---

The tour at Darjeeling has got undoubtedly a good deal of significance from educational viewpoint as it is internationally renowned as a tourist destination for its spectacular view of Mount Kanchanjungha along with top class aromatic tea industry and the Darjeeling Himalayan Railway (fondly known as toy train) which is now part of UNESCO world heritage site. Our students visited some important places with great endeavor e.g. Peace Pagoda, Rock Garden, Batashia Loop, Chowrasta Mall and Happy Valley Tea Estate. Their main attraction was Happy Valley Tea Estate, established by British planters in 1854 because it was a treat to eyes to watch the vast expanses of lush green tea gardens on the slope of the hills. Many tea bushes here are over 100 years old and it produces green, white and black tea. For shortage of time it was not possible to visit inside tea factory to watch various stages of tea processing, but the vivid description on those processes by a worker of tea factory evoked great interests among our students as these enriched sufficiently their knowledge in relevant areas. The most important aspect of this tour was the collection of tea leaves and some flowering Himalayan orchids for chemical investigation, isolation and identification of the chemical constituents of those plants. This, of course is an indispensable part of chemical research.

Apart from the educational interest, the tour bears another fold of significance in wider sense. The panoramic view of nature with hills and snowpeaks of Kanchanjungha soaring over the sky, mesmerizing sunrise, beautiful tea gardens and pine forests, wonderful sculptures and tranquil ambience of monasteries charmed and nourished our minds, specially of our students who have to undergo the pressure of huge syllabus, daily classes and examinations etc. throughout the year. We were overwhelmed by the warm welcoming reception of the local people. So this tour, in a word is obviously great lesson as well as inspiration to all of us for future life.



A short report on the excursion organized by the Department of Chemistry

In the session 2021-2022

Destination of tour: Lava and Kalimpong

Duration of tour: 8.5.22 – 12.5.22

Members participated in the tour ---

Prof. P.Sarkar, Dr. B. Chatterjee, Prof. Monisha Das, Dr. M. Roychowdhury (**Teachers**)

Shreya Deb, Nilanjana Das, Jayashri Mallick, Saikat Raut, Monotosh Biswas, Aparup Bose, Bitan Dey (**students of 6th sem Hons**) Pritam Sen, Tiyasha Barman, Saikat Ghosh, Swarnavo Mondal, Dwip Das, Sandip Das (**students of 4th Sem Hons**) Mizanoor Rahaman, Pritam Kumar Basak (**students of 2nd Sem Hons**)

Significance of the tour ---

The tour at Lava and Kalimpong has got undoubtedly an immense significance from educational viewpoint as it is located at Darjeeling district which is internationally renowned as a tourist destination for its spectacular view of Mount Kanchanjungha along with top class aromatic tea industry. Our students visited some important places of Lava and Kalimpong with great endeavor e.g. Lava Monastery, Rishap, Morgan House, Cactus Garden, and Delo Park. Their main attraction was the enchanting beauty of the vast expanses of lush green tea gardens on the slope of the hills. On the way from Lataguri to Lava we visited a tea factory of Gurjonghora Tea Estate to watch various stages of tea processing . Many types of machineries used and the vivid descriptions on those processes by a worker of tea factory evoked great interests among our students as these enriched sufficiently their knowledge in relevant areas. The most important aspect of this tour was the collection of tea leaves for chemical investigation, isolation and identification of the chemical constituents of those plants. This, of course is an indispensable part of chemical research.

Apart from the educational interest, the tour bears another fold of significance in wider sense. The panoramic view of nature with hills and snowpeaks of Kanchanjungha soaring over the sky, mesmerizing sunrise, beautiful tea and flower gardens, greenaries of pine forests and the river Tista, wonderful sculptures and tranquil ambience of monasteries charmed and nourished our minds, specially of our students who have to undergo the pressure of huge syllabus, daily classes and examinations etc. throughout the year. We were overwhelmed by the warm welcoming reception of the local people. So this tour, in a word is obviously great lesson as well as inspiration to all of us for future life.



NABADWIP VIDYASAGAR COLLEGE

DEPARTMENT OF PHILOSOPHY

REPORT OF EDUCATIONAL TOUR-2021-2022

The Department of philosophy, Nabadwip Vidyasagar College, was organised an Educational Tour on 24th June, 2022 to 26th June 2022 along with sixteen (4th semester) Students, four Faculty members and one Non-teaching staff, at Digha, East Midnapore, West Bengal. It was a joint tour with three other Departments — Bengali, Political Science, and History.

The purpose of this trip is to inculcate in students the understanding of Advaita Vedanta through the perception of sea. According to Advaita Vedanta Jiva and Paramatma are identical. But in the practical world, Jiva cannot easily perceive that uniformity. Swami Vivekananda explained the identity of Jiva and Supreme Soul very easily with the simile of the ocean. As new waves are generated from the sea, they disappear again in the sea. At first glance, these waves seem different from the sea, but they are nothing but the sea. In the same way jivatma seems to be different from Paramatma, but is identical in the transcendental view. Here Paramatma is compared to the ocean and Jivatma to the waves of the ocean.

In addition, we practiced yoga- pranayama according to Yoga Shastra in the beautiful environment of the sea shore.

Students were overwhelmed by seeing the actual beauty of the sea. They enjoyed the roaring of the sea and waves folded with the white crown. Besides these the students had learned bonding among themselves, developed the friendship, sharing mentality, discipline and equality. In a nutshell the whole trip was so encouraging and enjoyable to the students, faculty members and Non-teaching staff.

- **LIST OF THE TEACHER'S :**

- 1) DR. BAISHAKHI BURMAN
- 2) SMT. SHAMPA DAS
- 3) SRI. KISHOR PAUL
- 4) SRI. SUBHAM DAS

- **LIST OF THE NON TEACHING STAFF :**

- 1) SRI. ANIRBAN GHOSH

- **LIST OF THE STUDENT'S :**

- 1) RAJA CHOWDHURY

- 2) SONIA SAHA
- 3) SHIBU BISWAS
- 4) SHARMISTHA KARMAKAR
- 5) SHRABANI BHARTTACHARYA
- 6) SUPIYA DAS
- 7) PURNIMA DEBNATH
- 8) TANIMA GHOSH
- 9) PUJA GHOSH
- 10) KEYA DEY
- 11) DEBIKA BURMAN
- 12) CHAITALI MONDAL
- 13) DIPAK HALDER
- 14) SMRITIKANA DEY
- 15) SHRABANI DAS
- 16) SONALI DAS



Nabadwip Vidyasagar College
Educational Excursion Information (Year wise)
Academic Year: 2017-2018 to 2021-2022

Department of.....HISTORY.....

| Year | Tenure of journey | Destination | No. of Students | | | No. of Teachers | | | Whether included in the syllabus or not (if yes provide documents) | Name of Students |
|-------------------|--------------------------|-------------|-----------------|--------|-------|-----------------|--------|-------|---|---|
| | | | Male | Female | Total | Male | Female | Total | | |
| 2017 - 2018 | | | | | | | | | N.A | 1.Bidyut Ghosh 2.Anjan Sen 3.Bidhan Das 4.Amit Basak 5.Raju Sekh 6.Rabiul Sk 7. Shantanu Ghosh 8. Sunanda Gharami 9. Anita Rudra 10. |
| 2018 - 2019 | | | | | | | | | N.A | |
| 2019 - 2020 | | | | | | | | | N.A | |
| 2020 - 2021 | | | | | | | | | N.A | |
| 2021 - 2022 | 24/6/2022- 26/06/2022 | Digha | 07 | 03 | 10 | 02 | 01 | 03 | Under the new revised syllabus of C.B.C.S dated 29/04/2021, University of Kalyani has incorporated History and Tourism in India under Skill | |



| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|---|-----------------|
| | | | | | | | | | Enhancement Programme (SEC) where in Unit 4 there is inclusion of revisiting Bengal at Kolkata. | Indrani Debnath |
|--|--|--|--|--|--|--|--|--|---|-----------------|

The Department of History organized its first educational excursion after its inclusion in the syllabus under Skill Enhancement Programme in 2022. Taking the cue, the Department of History on 24/06/2022, joining hands with three other departments, viz., Department of Philosophy, Dept. of Political Science and Dept. of Bengali, started the journey to Digha with the purpose of revisiting Bengal through its coastal areas. The student strength of the Department of History included ten students (07- Male students and 03- female students) accompanied by three teaching faculty (02- Male teacher and 01- female teaching member) and one non-teaching staff.



Educational tour to Digha, Department of History.

Under the new revised syllabus of C.B.C.S dated 29/04/2021, University of Kalyani has incorporated History and Tourism in

India under Skill Enhancement Programme (SEC) where in Unit 4 there is inclusion of revisiting Bengal at Kolkata. Hence began the journey of leaning, acknowledging and experiencing the regions of Bengal through the eye of a historian.



The educational tour took shape on 24/6/2022 and ended on 26/06/2022. The students visited the Zoological Survey of India Museum and observed the marine life showcased in various forms.



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The field work on “Impact of river bank erosion on the livelihood of local people of ward no. 21, Rudrapara mouza, Nabadwip municipality”.

The field report was prepared under our supervision.



Shilpi Mondal
23/7/22

SHILPI MONDAL

S. Saha
23-7-2022

SAYANI SAHA

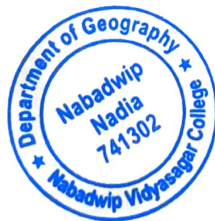
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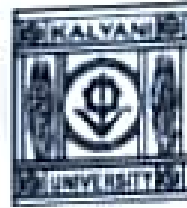
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UNIVERSITY OF KALYANI



B.A HONOURS 4TH SEMESTER EXAMINATION 2022

FIELD WORK

ON

"IMPACT OF RIVER BANK EROSION ON THE LIVELIHOOD OF LOCAL PEOPLE OF 21 NO. WORD, RUDRAPARA, NABADWIP, NADIA"



4TH SEMESTER

REGISTRATION NO. – 023417

ROLL NO. – 3114126 – 2026056

SESSION – 2020 – 2021

NABADWIP VIDYASAGAR COLLEGE

GUIDED BY – SAYANI SAHA & SHILPI MONDAL

ACKNOWLEDGEMENT

I convey my gratitude to our respected teacher Sayani Saha and Shilpi Mondal for their guidance in preparing the project report.

I acknowledge the help that was offered different govt. office who provided us with valuable map data and information related by the purpose and different Governmental vehicle which help us very much by providing more information about the field report and the local people who help us by providing more primary information about the study area.

CONTENTS

| SL. NO | PARTICULARS | PAGE NO. |
|---------------|--------------------------------|-----------------|
| 1 | INTRODUCTIONS | 1 |
| 2 | STUDY AREA | 2 - 4 |
| 3 | OBJECTIVE | 5 |
| 4 | METHODOLOGY | 6 - 8 |
| 5 | RESULT & DISCUSSION | 9 - 18 |
| 6 | CONCLUSION | 19 - 20 |
| 8 | REFERENCE | 21 |
| 9 | QUESTIONNAIRE | 22 - 24 |
| 10 | DATA TABLE | 25 - 28 |

INTRODUCTION

Bank erosion is the wearing away of the banks of a stream or river. This is distinguished from erosion of the bed of the watercourse, which is referred to as scour. The roots of trees growing by a stream are undercut by such erosion. As the roots bind the soil tightly, they form abutments which jut out over the water. River bank erosion has emerged to be one of the most annoying environmental hazards these days.

It is a complex process which incorporates actions of several complex processes and cannot be attributed to any single process. At present, the average quantum of land engulfed by the rivers is about 800 hectares in West Bengal. River Bhagirathi-Hooghly, the most prominent river of the state has resorted to large scale bank slumping and flood in Chhatni, Patuli, Purba Bardhaman.

Though there has been immense study on the erosional activity of this river in the state. Eminent national and international scholars have detected the causes of such erosional activities to be the typical flow properties of the river, the structural and compositional properties of the bank and climatic characteristics of the concerned area. The study tries to throw some light upon the factors which have probably acted jointly to produce such large scale wearing away of land in this part of the plane.

STUDY AREA

The study area of the project is Rudrapara in Nabadwip, Nadia, West Bengal. The latitude location of the area is 23°43'18.6317" N and the longitude location of the area 88°36'03.787" E. Rudrapara is a small part of Nabadwip municipality, Nadia district, West Bengal. The main river of this area is Bhagirathi-Hooghly river. The study area has the moderate climate prevailing. There is a lot of rainfall in the summer and the winter quite dry again. The average annual temperature is 34° and there is about 250 mm of rain in year.

OBJECTIVE

- 1.** Determine the causes of river bank erosion in the study area.
- 2.** Local people's perception on river bank erosion in the study area.
- 3.** Identify the impacts of river bank erosion on the livelihood of Rudrapara mouza.
- 4.** Prepare a mitigation plan to recover the problem related to river bank erosion.

METHODOLOGY

Pre Field Work : At this stage , the plan of the field work has been prepare. Students have extended their utmost effort to choose the word no. 21, Rudrapara mouza, in Nabadwip municipality for the question air survey; that will cover almost all aspect of river bank erosion and related problem prominent in this study area. This stakes has been accomplished through various analysis of secondary data collected from statistical hand book, 2011 of Nadia district, article, journals etc. To collect ground-based data accurately, GPS has been issued from the department, just prior to the field work. Data recording contingency-items like board, clip, field note book, pen, pencil etc. have also been taken from the departmental custody. Data collection sheets and structure question air for household survey related to river bank erosion have also been distributed amongst the field participants; withing the class room.

Field Work : Emphasis has been given mainly to the river bank erosion related problems but other allied aspects like education, occupation, drainage system, house amenities related facilities etc. have also been potrait through the primary survey. The total team divided into several smaller group with definite plan and programme and different targets were assigned by the supervisor to each and every group. The first aim was to proceed the primary data as accurately as possible.

Post Field Work : The data information received from manifold sources during the field survey, has thereafter been processed through various quantative techniques and then those have been cartographically represented by mix of charts, graphs, diagram and maps.

Used software: - Ms word, Ms Excel



PHOTO PLATE: 1



PHOTO PLATE: 2



PHOTO PLATE: 3



PHOTO PLATE: 4



PHOTO PLATE: 5



PHOTO PLATE: 6



PHOTO PLATE: 7

RUSELT & DISCUSSION

Fig 1: RIVER BANK EROSION AFFECTS HOUSEHOLD

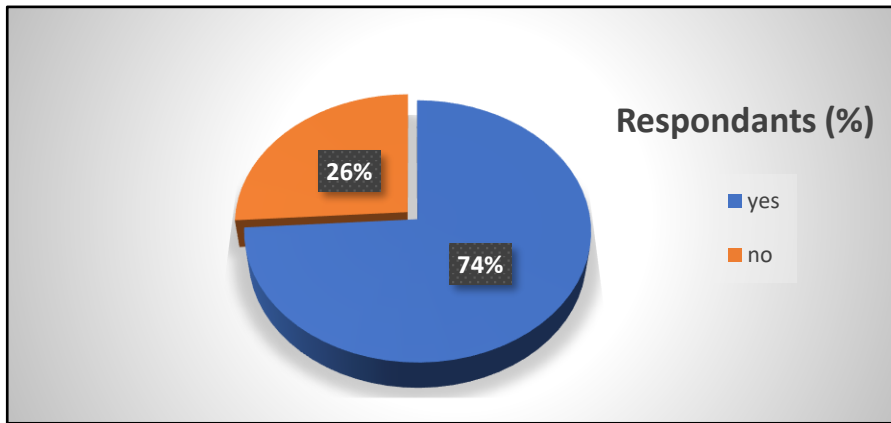


Fig 2: ENGAGED IN AGRICULTURE WORK

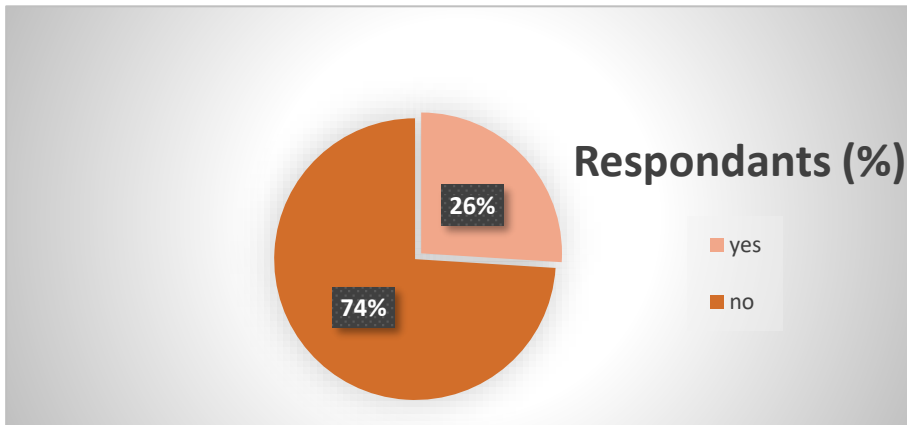


Fig 3: MAIN WORKER & MARGINAL WORKER

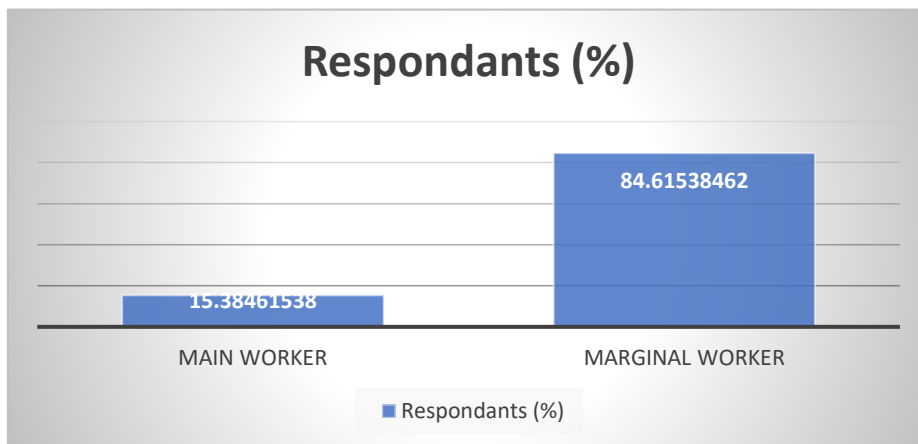
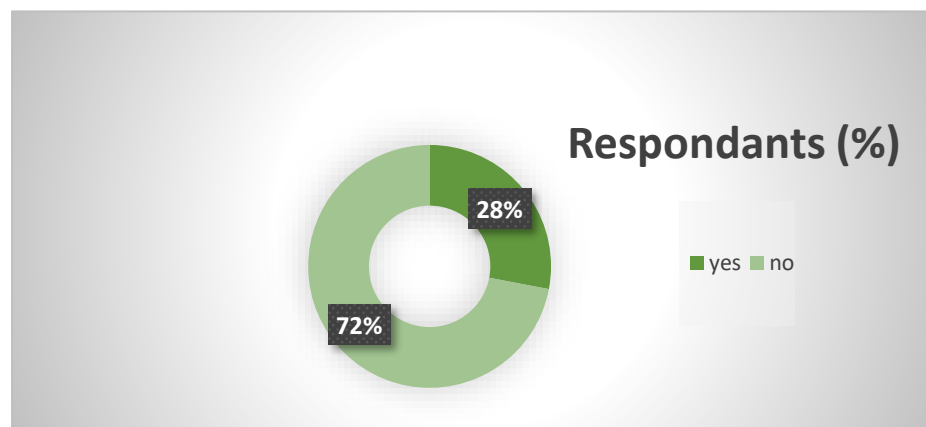


Fig 4: RIVER BANK EROSION AFFECTS AGRICULTURE LAND



RIVER BANK EROSION AFFECTS HOUSEHOLD

The survey site is 21 No. ward in Rudrapara, in Nabadwip. The site is very close to river Ganga, so its natural that the household is affected by river bank. This information shown by pie diagram. Here it has 74% of respondent's river bank erosion affected household (Fig 1).

ENGAGED IN AGRICULTURE WORK

In this graph the pie diagram shows the percentage of respondent engaged in agriculture. Here 13 peoples engaged with agriculture work and 37 peoples are not engaged non agriculture work, therefore 26% of people are involved in agriculture and 74% are not involved in agriculture.

In the next part the respondents is divided into two parts those are main work and marginal workers (Fig 2).

MAIN WORKER & MARGINAL WORKER

graph shows the percentage of main and marginal workers. The respondents of main worker and marginal worker are 2 and 11. The percentage of main worker is 15.38431538. On the other hand the percentage of marginal worker is 84.61538462.

So it can be said that, the number of marginal worker is highest, on the other hand the number of main worker is lowest (Fig 3).

RIVER BANK EROSION AFFECTS AGRICULTURE LAND

The survey site is 21 No. ward in Rudrapara, in Nabadwip. The site is very close to river Ganga, so its natural that the agricultural land is affected by river. This information shown by pie diagram. Here it has only 28% of respondents river bank erosion affected agriculture land (Fig 4).

Fig 5: AFFECTED AGRICULTURE LAND IN WHICH YEAR

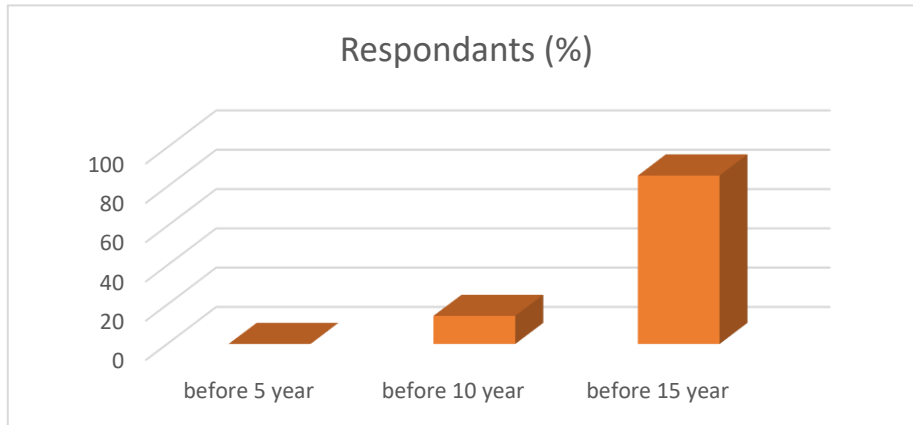


Fig 6: ENGAGE IN ANIMAL HUSBANDRY

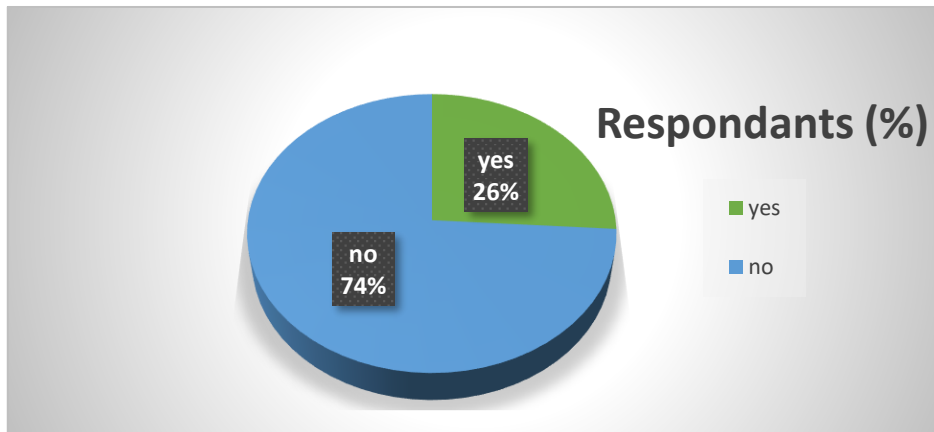


Fig 7: RIVER BANK EROSION AFFECTS ANIMAL HUSBANDRY

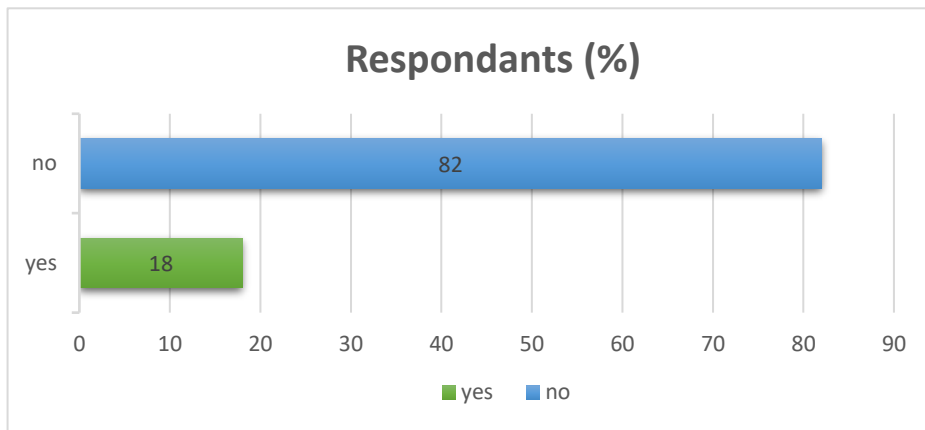
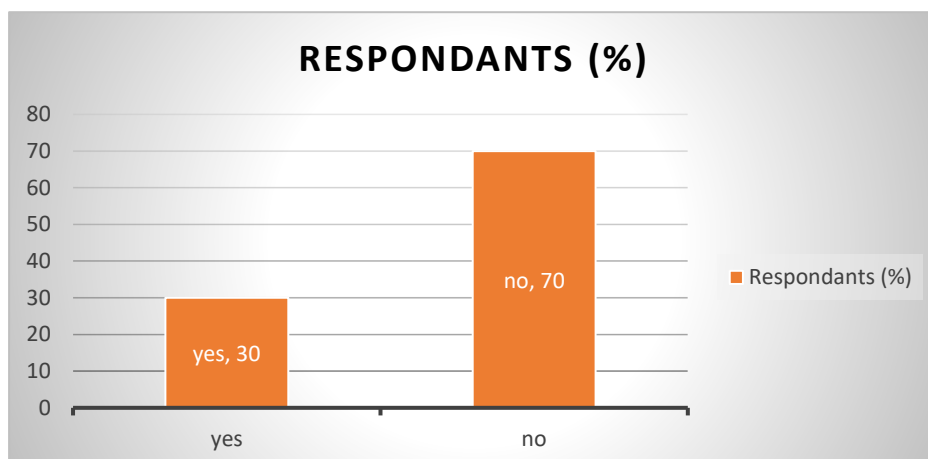


Fig 8: RIVER BANK EROSION AFFECTS YOUR FAMILY MEMBER



RIVER BANK EROSION AFFECTS AGRICULTURE LAND IN WHICH YEAR

The graph shows 72% of respondents agriculture land could not be affected by river bank erosion. The site was affected before 10 years ago only 14% and 15 years ago 85%. So, the river bank erosion play the minor cause of effectiveness of agricultural land (Fig 5).

ENGAGE IN ANIMAL HUSBANDRY

The graph shows that only 26% of respondents are engage in animal husbandry. And 74% of respondents are not engage in animal husbandry. So the river bank erosion play the minor role of effectiveness of animal husbandry (Fig 6).

RIVER BANK EROSION AFFECTS ANIMAL HUSBANDRY

The graph shows that the animal husbandry is affected by the river bank erosion. And it turns out that only 18%(9 people) of respondents animal husbandry is affected by the river bank erosion. And 82%(41 people) of respondents animal husbandry is not affected by River bank erosion. So the river bank erosion play the minor role of effectiveness of animal husbandry (Fig 7).

RIVER BANK EROSION AFFECTS YOUR FAMILY MEMBER

The graph shows that the human beings are affected by the river bank erosion. And it turns out that only 30%(15people) says that there family members are affected. And 70%(35 people) says that there family members are not affected by River bank erosion. So the river bank erosion play the minor role of effectiveness of human beings (Fig 8).

Fig 9: CAUSE OF RIVER BANK EROSION

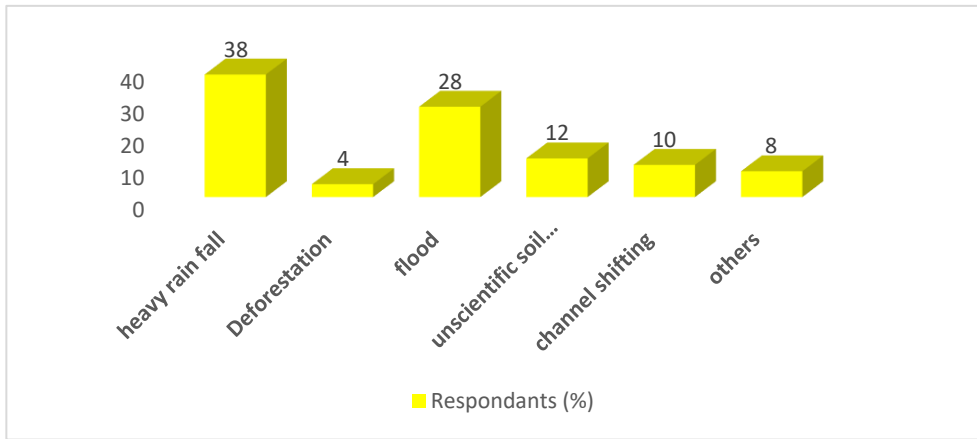


Fig 10: AFFORESTATION PROGRAM AFTER RIVER BANK EROSION

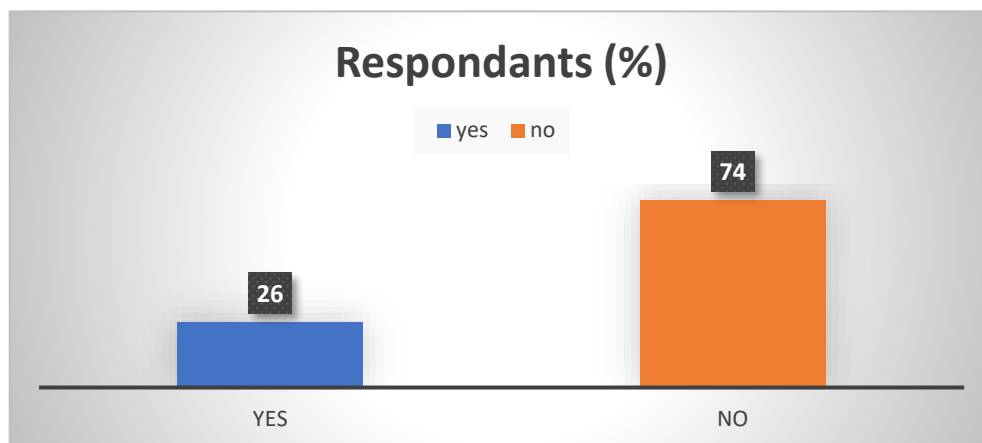


Fig 11: RIVER BANK EROSION EFFECTS ON SOIL DEGRADATION

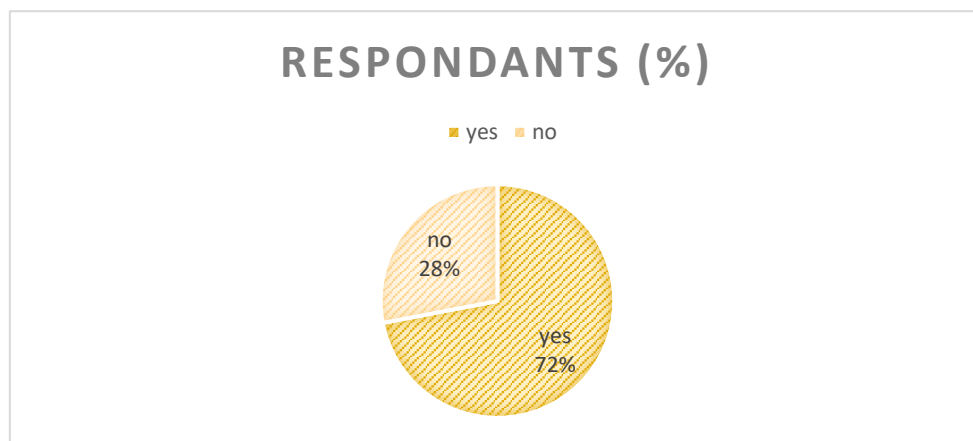
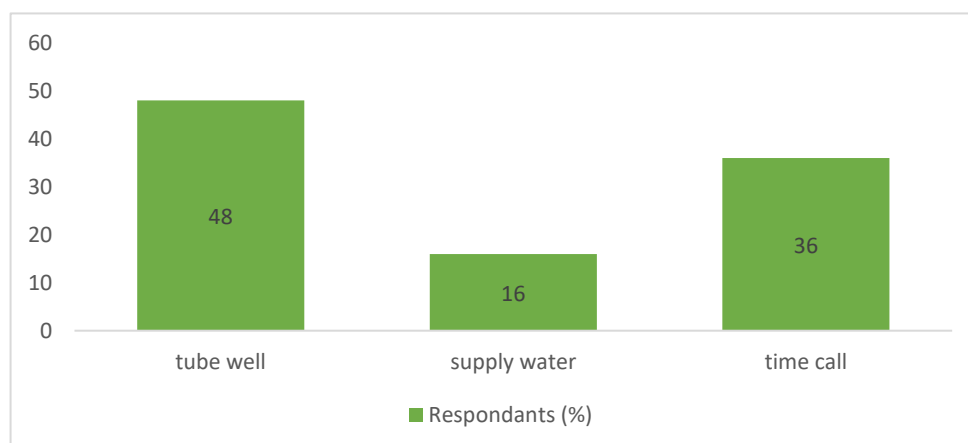


Fig 12: SOURCE OF DRINKING WATER



CAUSE OF RIVER BANK EROSION

The diagram shows the percentage of cause of river bank erosion. Some of the reason of river bank erosion are shown there. These are heavy rainfall, deforestation, flood, unscientific soil cutting, channel shifting and others. 19 people responded heavy rainfall as the cause of erosion across the river. 2- Deforestation, 14- flood, 6- unscientific soil cutting, 5- Channel shifting and others - 4. The percentage of heavy is 38% ,on the other hand the percentage of deforestation is 4%, the percentage of flood is 28% , the percentage of unscientific soil cutting is 12% , on the other hand the percentage of channel shifting is 10% and the percentage of others is 8% .

So, it can be said that, the highest percentage is 38% (heavy rainfall) and the lowest percentage is 4% (deforestation).

Therefore, according to the diagram, heavy rainfall is most responsible for river bank erosion (Fig 9).

AFFORESTATION PROGRAM AFTER RIVER BANK EROSION

Riverbank Erosion caused many plants to go under water. The result is a lot of damage to humans property as well as environmental vegetation. River bank erosion are often to reduce as a result of planting.

When I did my survey i asked some question about this afforestation during the survey basis of river erosion. I asked them if they have taken any steps towards afforestation. In my study area rudrapara 26%peoples said they have taken steps with afforestation. And 74%said they have not taken any action on afforestation after river bank erosion.

Most of people there said that no action has been taken on afforestation after river bank erosion. Forestry often prevents river bank erosion. So, we should create forests to survive river bank erosion (Fig 10).

RIVER BANK EROSION EFFECTS ON SOIL DEGRADATION

On the basic of primary survey in our study area we source that 72% of respondents are affected by river bank erosion. They says that due to river bank erosion the lost agricultural land, domestic land and decrease of land quality 28% of respondents denote it (Fig 11).

SOURCE OF DRINKING WATER

Drinking water facility is the primary needs of the people. In my study area Rudrapara Mouza i found 48% people drinks water from tube well, 36,% people drinks water from time call and 16%people drinks water from municipality supply water. As the river Bhagirathi passed beside my study area. So, the water level is high. So in my study area peoples get sufficient drinking water (Fig 12).

Fig 13: RIVER BANK EROSION EFFECTS ON GROUND WATER

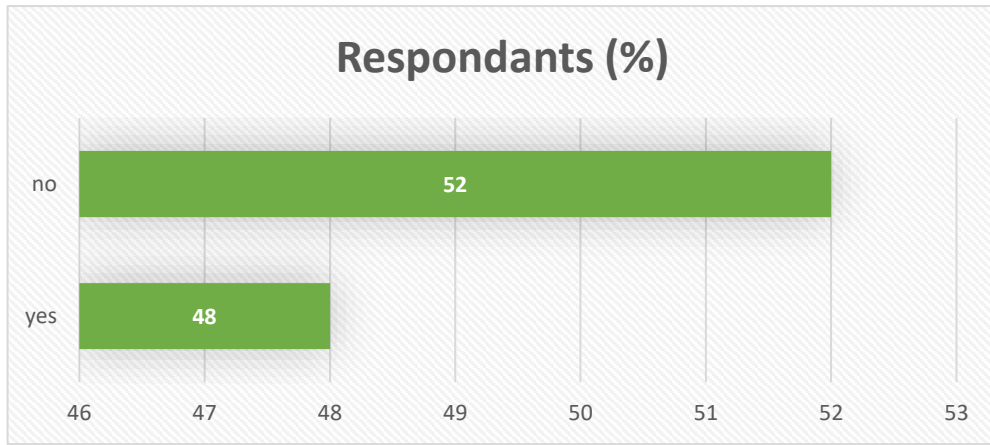


Fig 14: CONDITION OF DRAINAGE SYSTEM

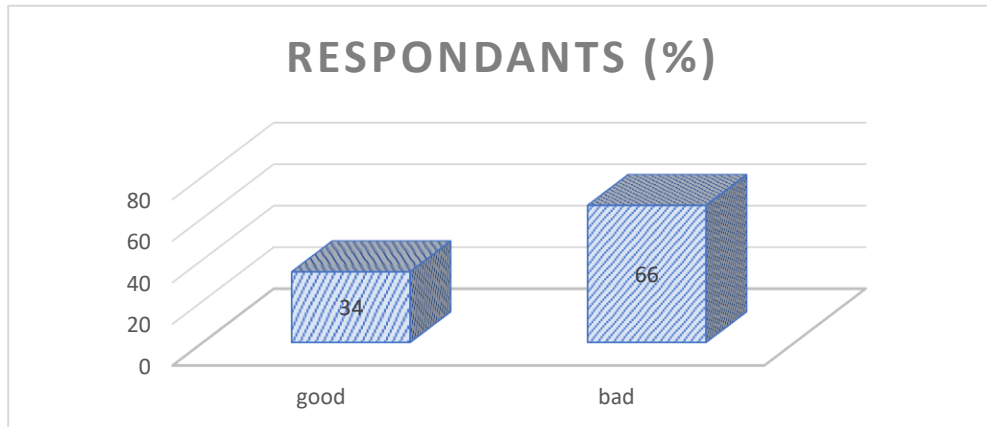


Fig 15: GOVERNMENTAL POLICY TO PREVENT RIVER BANK EROSION

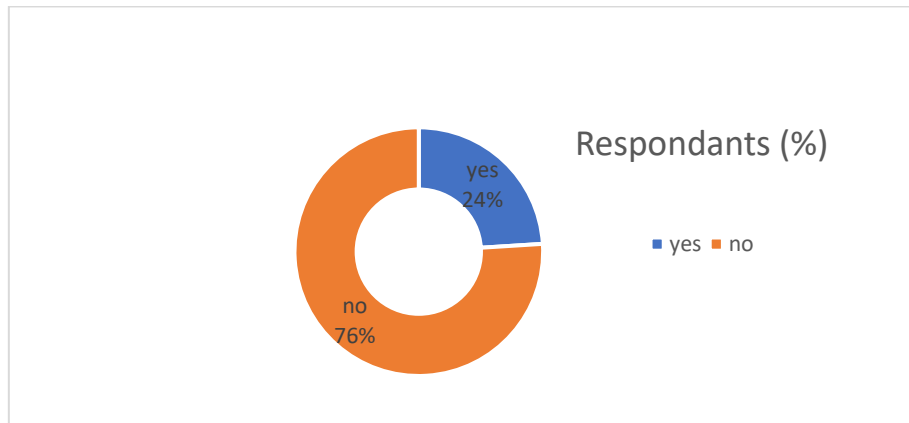
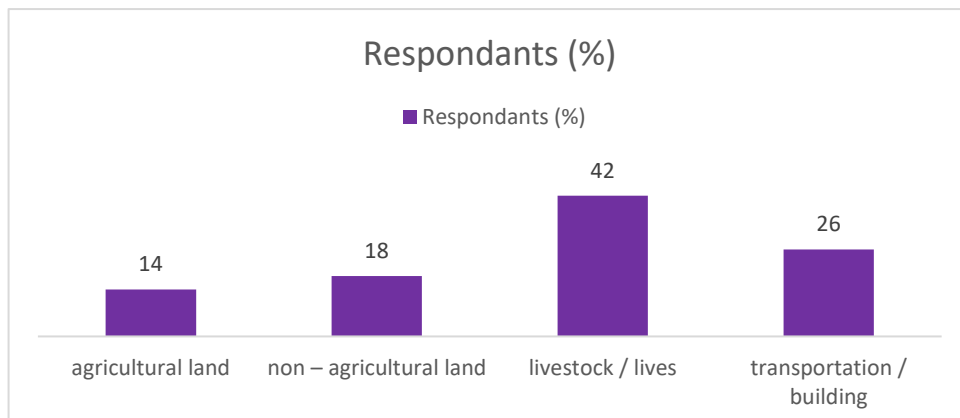


Fig 16: LIST OF PROPERTIES DESTROY BY RIVER EROSION



RIVER BANK EROSION EFFECTS ON GROUND WATER

Drinking water is an essential thing for everyone. In my study area Rudrapara mouza I found there are different sources of drinking water like that tube well, supply water, time call. During my field work I found that 48% of people used tube well as river Ganga passes beside the study area so water level becomes high. 16% used supply water and 36% used time call which comes under nabadwip panchayat level facility (Fig 13).

CONDITION OF DRAINAGE SYSTEM

The survey site is 21 ward in Rudrapara in Nabadwip. Here, the drainage system of this area only 34% is good and 66% of area is bad. So, the condition is very poor. The river bank erosion is one of the major causes of the bad condition of drainage (Fig 14).

GOVERNMENTAL POLICY TO PREVENT RIVER BANK EROSION

In our study area Rudrapara mouza, people are highly affected by the river bank erosion. As river bank erosion is a natural phenomenon but government should have to take policy to prevent the river bank erosion. During our field survey we found most of people (76%) told that government didn't take any policy to prevent the river bank erosion but 24% of people told that government take some policy to prevent the bank erosion (Fig 15).

LIST OF PROPERTIES DESTROYED BY RIVER EROSION

This survey project shows that much more people have lost their properties which were destroyed by river through erosion. Many survivors lost their properties due to river erosion. Among them 14% of agricultural land were destroyed, 18% of non-agricultural land were also destroyed. 42% of livestock was out of sight and transportation was totally eroded by river. People suffered a lot due to losing their livelihood and those lands which earned them food. Still then they were in a shock for losing their properties and lives.

Similarly 7 respondents suffered for agricultural land as well as 9 of them also suffered from same problem for non-agricultural land. 21 of them lost their lives as well as 13 respondents suffered for transportation (Fig 16).

Fig 17: WHO HELPS YOU IN THE PITY CONDITION BY EROSION?

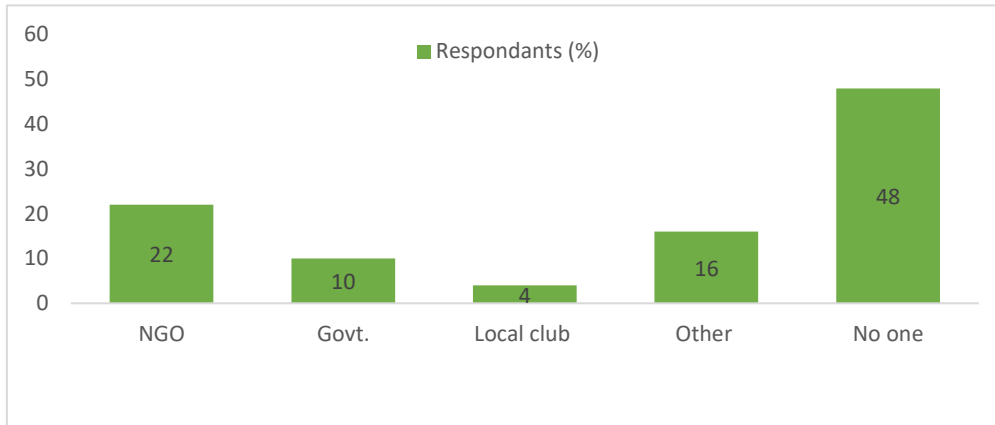


Fig 18: OCCUPATION CAN HELP YOU TO SURVIVE IN THE PITY

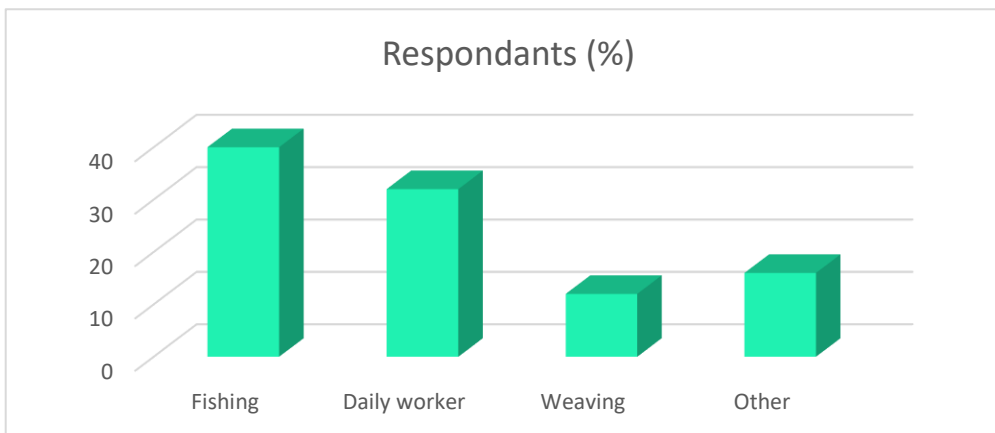


Fig 19: NUMBER OF TIMES OF HOUSE SHIFTING DUE TO RIVER

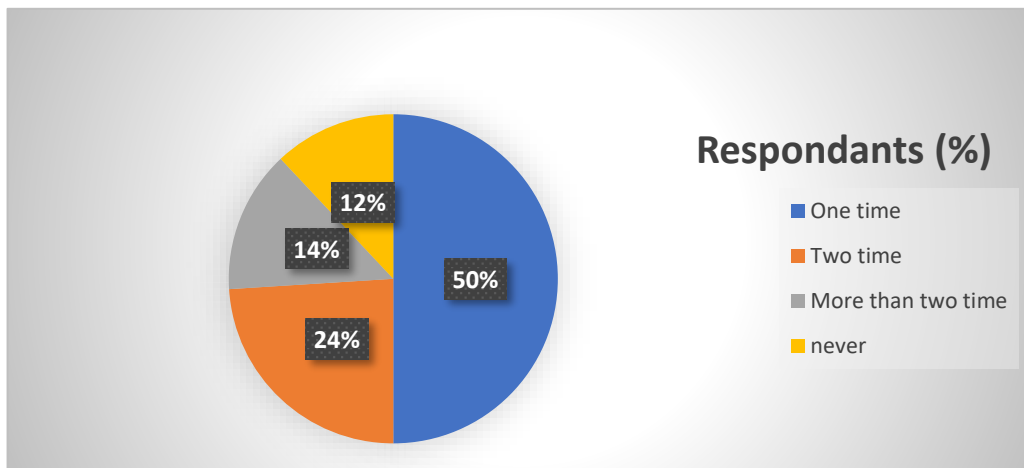
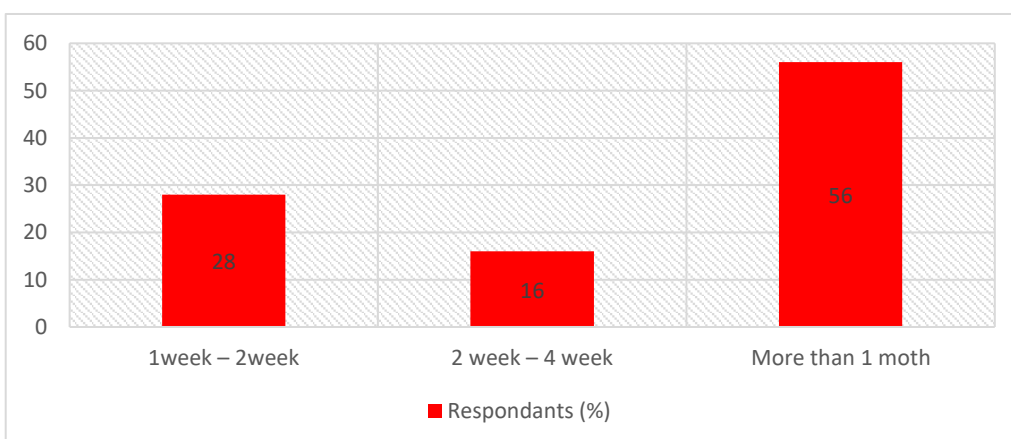


Fig 20: TIME AND DURATION OF HOMELESSNESS



WHO HELPS YOU IN THE PITY CONDITION BY EROSION?

Every year river bank erosion causes damaged many peoples property. That some people become homeless. As a result they are helped many ways. During the river bank erosion government and many NGOs were helped there.

During my primary survey, the local peoples said that ngos, government, local club helps their family in pity condition. 22%peoples said NGOs helped there. 10% said government, and 4%said local club. 16%said helped by others side. Most peoples (48%) said no one helped them.

During my field study, I noticed that their condition was not very good. Many are struggling to make ends meet as river bank erosion destroy their property (Fig 17).

OCCUPATION CAN HELP YOU TO SURVIVE IN THE PITY CONDITION

The graph shows that the local people is affected in the pity condition by erosion. And it shows that only 40%(20 people) says that they survived by fishing,32%(16 people) says that they survived by daily worker, 12% (6 people) says that they survived by waving , 16% (8 people) says that they survived by other occupation help in pity condition (Fig 18).

NUMBER OF TIMES OF HOUSE SHIFTING DUE TO RIVER EROSION

This survey result shows that many people have lost their homes due to river bank erosion.50% of people's household were shifted in one time, 24% of people's household were shifted in two times and 14% of people's household were shifted in more than two times due to river bank erosion. 12% of people's household were not shifted any time due to river bank erosion (Fig 19).

TIME AND DURATION OF HOMELESSNESS

Due to river bank erosion the people were lost their homes.28% of people among them were homeless for 1week - 2weeks, 16% of people were homeless for 2weeks - 4weeks and 56% of people were homeless for more than 1 month (Fig 20).

CONCLUSION

The field study shows that many people have lost their homes due to river bank erosion in ward no.21, Rudrapara Mouza, Nabadwip Municipality. Few people of this area engaged in agriculture. Some of the reasons of River Bank Erosion are heavy rainfall, deforestation, flood, unscientific soil cutting, channel shifting etc. Many people of this study area drink water from tube well and time call. Those people who have suffered due to river bank erosion 24% of people among them were told that government take some policy to prevent the bank erosion. Fishing, daily worker, weaving and other occupation can help people to survive in the pity condition. Those people who have lost their homes due to river bank erosion lots of people among them were homeless for more than 1 month. In this pity condition government gave many things like ration, food subsidy, temporary shelter etc.to help people.

Many respondents suggest that:-

- Build a dam to prevent River Bank Erosion.
- Planting more and more native tree.
- Dumping at river bank.

MAJOR FINDINGS

CAUSES OF RIVER BANK EROSION:

i) Flood: Flood is the most crucial reason of river bank erosion. The chance of flood increases in the rainy season. During flood the huge amount of water flow with higher velocity bring enough energy to tear away the top layer of soil and even causes mass failure.

ii) Heavy Rainfall: Soil can be eroded by heavy and excessive rainfall. Heavy rainfall often causes strong waves which can loosen and wear away non cohesive bed materials.

iii) Housing Near Bank: People in rural area make their home near the bank which adds comprehensive force to the soil beyond its capacity and the causes erosion

iv) Strong Current of River: Strong current generate because of the volume of the water flowing of the steep stream gradient. Where the river current very much high, river bank erosion can occur.

v) Sedimentation: Various disturbance in the nature can causes sedimentation. Silt accumulation at the river beneath reduces water holding capacity of a river as saturation of bank occurs.

vi) Deforestation Causes of River Bank Erosion: Human facilitate erosion by cutting down trees at the bank for their own use and removing the natural reinforcement which exists there.

IMPACT OF RIVER BANK EROSION:

i) Agriculture land was crashed.

ii) Effected on ground water.

iii) Loses of house.

iv) Losses of domestic animal.

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ANNEXURE

QUESTIONNAIRE SURVEY ON RIVER BANK EROSION

GENERAL INFORMATION

DATE OF SURVEY:

...../...../.....

| | |
|--------------------------------|--|
| RESPONDENTS NAME: | |
| HEAD OF THE FAMILY: | |
| NAME OF VILLAGE / WARD: | |
| BLOCK NAME: | |
| AGE: | |
| SEX: | |

EDUCATIONAL INFORMATION

| PRIMARY | | UPPER PRIMARY | | SECONDARY | | HIGHER SECONDARY | | U.G | | UP TO U.G | |
|---------|---|---------------|---|-----------|---|------------------|---|-----|---|-----------|---|
| M | F | M | F | M | F | M | F | M | F | M | F |
| | | | | | | | | | | | |

OCCUPATION INFORMATION

| AGRICULTURE | BUSINESS | JOB | OTHERS (PLEASE SPECIFY) |
|-------------|----------|-----|-------------------------|
| | | | |

1. Distance of river from household: i) < 5km ii) 5 – 10 km iii) 10 – 15 km

Year of living: i) < 5 year ii) 5 – 10 year iii) > 10 year

2. River bank erosion affects household: i) Yes ii) No

3. Are you engaged in agriculture work: i) Yes ii) No

If yes, main worker marginal worker

4) River bank erosion affects agriculture land: i) Yes ii) No

If yes, please specify

.....

In which year: i) before 5 year ii) before 10 year iii) before 15year

5. Are you engage in animal husbandry: i) Yes ii) No

6. River bank erosion affects animal husbandry: i) Yes ii) No

If yes, please specify

.....

7. River bank erosion affects your family member: i) Yes ii) No

If yes, injured dead please specify the number

.....

8. Cause of river bank erosion: i) heavy rain fall ii) Deforestation iii) flood

iv) unscientific soilcutting v) channel shifting vi) others

please specify

9. There are afforestation program after river bank erosion: i) Yes ii) No

If yes, mention the name of trees

.....

10. River bank erosion effects on soil degradation: i) Yes ii) No

If yes, please specify

.....

11. Source of drinking water: i) river ii) well iii) tube well iv) supply water
/time call

12. River bank erosion effects on ground water: i) Yes ii) No

13. Condition of drainage system: i) good ii) bad

14. If there is any governmental policy to prevent river bank erosion: i) Yes ii) No

If yes, please specify

.....

15. List of properties destroy by river erosion: i) agricultural land ii) non – agricultural
land iii) livestock / lives iv) transportation / building

16. Who helps you in the pity condition by erosion?

Ans:

.....

17. In the pity condition what is your last possession?

Ans:

.....

18. Which occupation can help you to survive in the pity condition?

Ans:.....

19. a) Number of times of house shifting due to river erosion

.....

b) Time and duration of homelessness

.....

22. Suggestion from the respondent to prevent river bank erosion

.....

DATA TABLE

TABLE 1: DISTANCE OF RIVER FROM HOUSEHOLD:

| HOUSEHOLD | | |
|-----------|-----------|------------|
| < 5km | 5 – 10 km | 10 – 15 km |
| 50 | | |

TABLE 2: YEAR OF LIVING:

| LIVING | | |
|----------|-------------|-----------|
| < 5 year | 5 – 10 year | > 10 year |
| 1 | 7 | 42 |

TABLE 3: FOR PIE DIAGRAM SHOWING AFFECTED HOUSEHOLD:

| AFFECTS HOUSEHOLD | |
|-------------------|----|
| Yes | No |
| 74 | 26 |

TABLE 4: FOR PIE DIAGRAM SHOWING AGRICULTURE WORK:

| AGRICULTURE WORK | |
|------------------|----|
| Yes | No |
| 26 | 74 |

TABLE 5: FOR BAR DIAGRAM SHOWING MAIN & MARGINAL WORKER

| MAIN & MARGINAL WORKER | |
|------------------------|-----------------|
| main worker | marginal worker |
| 15.3846 | 84.6153 |

TABLE 6: FOR PIE DIAGRAM SHOWING AFFECTED AGRICULTURE LAND:

| AGRICULTURE LAND | |
|------------------|----|
| Yes | No |
| 28 | 72 |

TABLE 7: FOR BAR DIAGRAM SHOWING AFFECTED AGRICULTURE LAND IN WHICH YEAR:

| YEAR | | |
|---------------|----------------|----------------|
| before 5 year | before 10 year | before 15 year |
| 0 | 14.2857 | 85.7142 |

TABLE 8: FOR PIE DIAGRAM ENGAGE IN ANIMAL HUSBANDRY:

| ANIMAL HUSBANDRY | |
|------------------|----|
| Yes | No |
| 26 | 74 |

TABLE 9: FOR BAR DIAGRAM SHOWING AFFECTED ANIMAL HUSBANDRY:

| AFFECTS ANIMAL HUSBANDRY | |
|--------------------------|----|
| Yes | No |
| 18 | 82 |

TABLE 10 FOR BAR DIAGRAM SHOWING AFFECTED YOUR FAMILY MEMBER:

| FAMILY MEMBER | |
|---------------|----|
| Yes | No |
| 30 | 70 |

TABLE 11: FOR BAR DIAGRAM SHOWING CAUSE OF RIVER BANK EROSION:

| CAUSE | | | | | |
|-----------------|---------------|-------|---------------------------|------------------|--------|
| heavy rain fall | Deforestation | flood | unscientific soil cutting | channel shifting | others |
| 38 | 4 | 28 | 12 | 10 | 8 |

TABLE 12: FOR BAR DIAGRAM SHOWING AFFORESTATION PROGRAM

| AFFORESTATION PROGRAM | |
|-----------------------|----|
| Yes | No |
| 26 | 74 |

TABLE 13: FOR PIE DIAGRAM SHOWING SOIL DEGRADATION:

| SOIL DEGRADATION | |
|-------------------------|-----------|
| Yes | No |
| 72 | 28 |

TABLE 14: FOR BAR DIAGRAM SHOWING SOURCE OF DRINKING WATER:

| SOURCE | | | | |
|---------------|-------------|------------------|---------------------|------------------|
| river | well | tube well | supply water | time call |
| | | 48 | 16 | 36 |

TABLE 15: FOR BAR DIAGRAM SHOWING GROUND WATER:

| GROUND WATER | |
|---------------------|-----------|
| Yes | No |
| 48 | 52 |

TABLE 16: FOR BAR DIAGRAM SHOWING CONDITION OF DRAINAGE SYSTEM:

| DRAINAGE SYSTEM | |
|------------------------|------------|
| Good | bad |
| 34 | 66 |

TABLE 17: FOR PIE DIAGRAM SHOWING GOVERNMENTAL POLICY

| GOVERNMENTAL POLICY | |
|----------------------------|-----------|
| Yes | No |
| 24 | 76 |

TABLE 18: FOR BAR DIAGRAM SHOWING LIST OF PROPERTIES

| LIST OF PROPERTIES | | | |
|---------------------------|--------------------------------|--------------------------|----------------------------------|
| agricultural land | non – agricultural land | livestock / lives | transportation / building |
| 14 | 18 | 42 | 26 |

TABLE 19: FOR BAR DIAGRAM SHOWING HELPS YOU IN THE PITY CONDITION

| HELPS YOU | | | | |
|------------------|--------------|-------------------|--------------|---------------|
| NGO | Govt. | Local club | Other | No one |
| 22 | 10 | 4 | 16 | 48 |

TABLE 20: FOR BAR DIAGRAM SHOWING WHICH OCCUPATION CAN HELP YOU TO SURVIVE IN THE PITY CONDITION?

| OCCUPATION | | | |
|-------------------|---------------------|----------------|--------------|
| Fishing | Daily worker | Weaving | Other |
| 40 | 32 | 12 | 16 |

TABLE 21: a) FOR PIE DIAGRAM SHOWING NUMBER OF TIMES OF HOUSE SHIFTING:

| HOUSE SHIFTING | | | |
|-----------------------|-----------------|---------------------------|--------------|
| One time | Two time | More than two time | never |
| 50 | 24 | 14 | 12 |

TABLE 22: b) FOR BAR DIAGRAM SHOWING TIME AND DURATION OF HOMELESSNESS:

| HOMELESSNESS | | |
|----------------------|------------------------|-------------------------|
| 1week – 2week | 2 week – 4 week | More than 1 moth |
| 28 | 16 | 56 |

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the
University of Kalyani)

Use of Visual E -Content in Commerce Teaching - A Case Study of 'Scam -1992'

Submitted by

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August 2021

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the University of Kalyani)

কোভিড-১৯ এর ফলে শিক্ষা ব্যবস্থায় অনলাইন শিক্ষার প্রভাব

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Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the
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Assessment of Financial frauds: A Study on Emerging issues among
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Ecommerce in India-pre and post covid scenario

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Performance of Life Insurance Corporation of India in the Pre and Post Liberalization Era

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Annual Reports of Arvind Mills and Bombay Dyeing.

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35

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the University of Kalyani)

"THE IMPACT OF DIVIDEND POLICY ON INVESTMENT"

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34

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the University of Kalyani)

"CASH FLOW STATEMENT IN A FINANCIAL INSTITUTION"

Submitted by --

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28

Examined on
27/06/2022
27/06/2022

Project Report

(Submitted for the Degree of B.Com Honours in Accounting &
Finance under the University of Kalyani)

"THE IMPACT OF CAPITAL BUDGETING IN PRIVATE SECTOR"

Submitted by

MD SHOHRA HUSSAIN

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28

Expanded on class
27/06/2022

Project Report

**(Submitted for the Degree of B.Com Honours in Accounting &
Finance under the University of Kalyani)**

"THE IMPACT OF CAPITAL BUDGETING IN PRIVATE SECTOR"

Submitted by

MD SHOHRA HUSSAIN

Your Name

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Registration No : **024830**

University Roll No : **1116126-1924857**

Supervised by

TKS

Nabadwip Vidyasagar College

June 2022

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5311

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the
University of Kalyani)

"Accounting Ratio Analysis"

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AniketMahajan

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Session : 2019-2020

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June 2022

31

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+ signed
over
28/06/2022.

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Dr. Joydip Dasgupta

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the University of Kalyani)

Ecommerce in India-pre and post covid scenario

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32

Examined,
marked
and signed
2.4.2022

Project Report

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"Cryptocurrency– an overview"

Submitted by

Debashis Saha

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June 2022

(32)

Examined
by
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Date:

28/06/2022

Project Report

(Submitted for the Degree of B.Com Honours in Accounting & Finance under the University of Kalyani)

কোভিড-১৯ এর ফলে শিক্ষা ব্যবস্থায় অনলাইন
শিক্ষার প্রভাব

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June 2022

FOR THE YEAR 2021 (6TH SEM)

SUPERVISED BY **JOYDIP DASGUPTA**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|--|--------------------|----------------------------|
| Arnab Saha | Use of Visual E -Content in Commerce Teaching - A Case Study of 'Scam -1992 | 1116126-180022 | 025126 |
| Rahul Debnath | Assessment of Financial frauds: A Study on Emerging issues among Private vs Public Sector Banks in India | 1116126-180017 | 025142 |
| Satyam Debnath | Working Capital Management Efficiency: A study on the Indian Cement Industry | 1116126-180022 | 025147 |
| Sougata Debnath | Performance of Life Insurance Corporation of India in the Pre and Post Liberalization Era | 1116126-180023 | 025148 |
| Soumajit Adhikary | Annual Reports of Arvind Mills and Bombay Dyeing | 1116126-180025 | 025150 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY **JOYDIP DASGUPTA**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|---|---------------------|----------------------------|
| Debashis Saha | Cryptocurrency– an overview” | 1116126- 1924855 | 024828 |
| Ripan Das | Ecommerce in India-pre and post covid scenario | 1116126- 1924862 | 024835 |
| Ranajit Dhar | কোভিড-১৯ এর ফলে শিক্ষা ব্যবস্থায় অনলাইন শিক্ষার প্রভাব | 1116126- 1924860 | 024833 |

FOR THE YEAR 2022 (6TH SEM)

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|---|--------------------|----------------------------|
| Aniket Mahajan | Accounting Ratio Analysis | 1116126-1924852 | 024825 |
| Debanshu Pal | A Study on Perception about Mutual Fund in the District of Nadia | 1116126-192854 | 024827 |
| Biswajit Saha | A study of Customer Awareness on E Banking in the District of Nadia | 1116126-1924853 | 024826 |

SUPERVISED BY **SIBA PRASAD CHAKRABARTI**

FOR THE YEAR 2021 (6TH SEM)

SUPERVISED BY **SIBA PRASAD CHAKRABARTI**

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|----------------------------|--|--------------------|----------------------------|
| Biton Kirtania | GST | 1116162-180005 | 025130 |
| Rana Debnath | Working Capital Management | 1116162-180018 | 025143 |
| Sourav Pal | Online banking | 1116162-180027 | 025152 |
| Netai Dey | Working Capital Management of Cooperative Bank | 1116162-180014 | 025139 |
| Soujas roy | Working Capital Management of Punjab National Bank | 1116162-180024 | 025149 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY TAPAN KUMAR SAMANTA

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Md Sohara Hussain | The Impact of Capital Budgeting in Private Sector | 1116126-1924857 | 024830 |
| Gourav Das | Cash Flow Statement in a Financial Institution | 1116126-1924856 | 024829 |
| Rijan Debnath | The Impact of Dividend Policy on Investment | 1116126-1924861 | 024834 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY AMIT KUMAR CHAKRABARTY

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Suvrajit Mondal | A Study on Relationship between Sensex and Share Price of SBI. | 1116126-1924868 | 024841 |
| Ritam Karmakar | A Study on Students Online Buying Behaviour influenced by Facebook Advertisement. | 1116126-1924863 | 024826 |
| Sanjoy Adhikary | An appraisal of Mutual Fund Investor of Nadia District | 1116126-1924866 | 024839 |

FOR THE YEAR 2022 (6TH SEM)

SUPERVISED BY AMIT KUMAR BISWAS

| NAME OF THE STUDENT | NAME OF THE PROJECT | ROLL NUMBER | REGISTRATION NUMBER |
|---------------------|---|-----------------|---------------------|
| Sushovan Saha | A study on customer's perception on Online Banking in the district of Nadia | 1116126-1924869 | 024842 |

Nabadwip Vidyasagar College
Department of Environmental Science
Internal Assignment (Project)

SEMSTER I

COURSE: ABILITY ENHANCEMENT COMPULSORY COURSE

(Code: UG-ENVS-H-AECC-02)

SUBJECT: ENVIRONMENTAL STUDIES

F.M: 10

Email id: envs@nvc.ac.in

1. Describe the causes and impact of air pollution. (5+5)

1. বায়ু দূষণের কারণ ও ফলাফল বর্ণনা করুন. (5+5)

Nabadwip Vidyasagar College
Department of Environmental Science
Internal Assignment (Project)

SEMSTER II

COURSE: ABILITY ENHANCEMENT COMPULSORY COURSE

(Code: UG-ENVS-H-AECC-02)

SUBJECT: ENVIRONMENTAL STUDIES

F.M: 10

Email id: envs@nvc.ac.in

2. Describe the causes and impact of water pollution. (5+5)

2. জল দূষণের কারণ ও ফলাফল বর্ণনা করুন. (5+5)

Student name :- Saheli Dey

University Registration number :- 026134

Department :- Philosophy Honours

Subject :- Environmental Studies

Semester :- 1st Semester

Name of the paper :- AECC

class Roll :- 24

Student ID :- 12021PHH24

Assignment project topic :- বায়ু দূষণের কারণ ও মনোমগ্ন বর্ণনা করুন।

বায়ুদূষণ :-

বায়ুতে হানুস ও তার পরিবেশের স্বাস্থ্যঝরিকারী পদার্থের অস্বাভাবিক বৃদ্ধির মনে উদ্ভূত পরিষ্কারিতাকে বায়ুদূষণ বলে।

বায়ুদূষণের কারণ :-

বায়ুদূষণের দুটি কারণ। যথা - A) প্রাকৃতিক কারণ, B) অনুশূচ্য কারণ।

A) প্রাকৃতিক কারণ :-

- ১) অশান্তকালিক বয়ু (বুঁঝকোতু, উলুনাও)
- ২) আবহাওয়ার পরিবর্তন (উষ্ণতা, উষ্ণকল্প (CO₂, হাইড্রোজেন ডালফোর্ট)
- ৩) চন্দ্রানল (CO₂, নাইট্রোজেনের নিউন ও অস্বাভাবিকতা ও অস্বাভাবিকতা)
- ৪) বায়ু (এর কারণে অস্বাভাবিকতা বায়ুদূষণে উচ্চতা ২য়)
- ৫) উদ্ভিদ (সরকারেণু, হুজাব)
- ৬) প্রাণী (পাখির মালক, লোমক প্রাণীর লোম)
- ৭) জ্বালানী (CH₄, H₂S)
- ৮) ভারী বায়ু (বায়ুতে উদ্ভাবিত ভারী বায়ু)

B) অনুশূচ্য কারণ :-

- ১) অস্বাভাবিক কারণ (H₂S, CO, S₂, CFC, NH₃, তেজস্ক্রিয় পদার্থ)
- ২) জ্বালানী (H₂S, স্ট্রোনিওর কারণে)
- ৩) পরিবহন অস্বাভাবিক (SO₂, CO, CO₂, H₂S)
- ৪) অস্বাভাবিক ও অস্বাভাবিক কারণে মনোমগ্ন হুসন (CO, CO₂, H₂S)

বায়ুদূষণের প্রভাব ও মনোমগ্ন :-

বায়ুদূষণের মনোমগ্নকে অস্বাভাবিক হুসন ও অস্বাভাবিকতা মনে। যথা -

B.A General UNIVERSITY OF KALYANI

2ND SEMESTER INTERNAL EXAMINATION 2022

NAME Ruiyanshu Haldar

ROLL NO 2261

REG. NO. 028557

OF 2021-2022

SUBJECT Environmental Studies PAPER AEEC STUDENT ID 12021BAG2261

উপক-ENVS-H-AEEC

① জলদূষণের কারণ ও ফলাফলগুলি বর্ণনা করো.

জলদূষণঃ-

জলের অর্থাৎ কোনো অ্যাবদার্থ সিলে প্রাকৃতিক জলে যদি জল লোভা হয় তবু জলের গুণ ও বাসায়তির বর্ধি বিধিযে প্রভিত্তত হয়ে তবু তার ফলস্বরূপ জলজ উদ্ভিদ প্রাণী ও মানুষের অধিক আক্রমণ হয়ে তাহলে জলদূষণ বলে.

জলদূষণের কারণঃ- ভৌগোলিক উৎসঃ- কলকারখানা, শস্যচাষাল অগাধস্থল, অন্যেভৌগোলিক উৎসঃ- গাছের জড়ি, খুলের বগান, সড়কা, খোদা, জাহাজ,

① কিল্ম ও কলকারখানার বর্জ্য বাদার্থঃ- বাং, তেলকারখানা, প্রুতি কিল্মের বর্জ্য বাদার্থ জলকে অপরথেকে লেজি দূষিত করে, কলকারখানা থেকে নির্গত বীতর বাদার্থ যেমন- তামা, মিসা, দস্তা- ইত্যাদি বাসায়তির বাদার্থ যেমন- আবস্থায়, প্রাণি ও অজীবীয় উদ্ভ তেল, চর্বি, ত্রিত ইত্যাদি. উদাহরণঃ- শলাদি কী,

② নর্দমা নিষ্কাশিত আর্জনাঃ- অহুয়ে আর্জনা, বর্জাই ধানার সড়কা, প্রাণাল ও ক্ষুভাত গিয়া জলের অধিকারকর্ই জলাকরকে দূষিত করে.

③ কৃষিতে ব্যবহৃত বাসায়তির বাদার্থঃ- কৃষিক অঞ্চলের উৎসাদন কারানোর অন্য অধিক ব্যবহৃত বাসায়তির জাব, মীটোফক, তামায়া নামক প্রুতি কিল্ম থেকে প্রুত প্রুতিয়র তদুনি অধিক নীচ সিলে জলাকর, তারি নালা- পুষ্করকে দূষিত করে.

NAME:- Priyanshu Haldar Roll No:- 2261

REG NO:- 028557 OF-2021-2022 SUBJECT- Environmental Studies

৭) প্রতিমা-বিষয়ন:- প্রতিমা-বিষয়ন তর যালে প্রতিমা-ব্যবহৃত ক; তলে জলে ক্ষিপ্র জলকে যেমন দূষিত করে তেমনি কাচি, ধর, তলে জলে যোগ্য যালে, ফুল ইত্যাদি উৎসবের জলাক্ষয় বা নদী-সংক্রমে তর্যি করে দূষন ঘটায়,

জল দূষণের ফলাফল:- জল দূষণের ফলে স্বাস্থ্য, আনুষ্ঠিক উদ্ভিদ ও প্রাণী জগতের ব্যবস্থা ক্ষতি হয়, ক

১) স্বাস্থ্যের উপর প্রভাব:- দূষিত জল ব্যবহার করার ফলে - আমাশয়, গর্ভসংক্রম, কলেরা, ডায়েন্টরিয়া, কিডনির অক্ষয়, অ্যালার্জি হতে পারে,

৩) স্থিতিকার উপর প্রভাব:- কৃষিক্ষেত্রে দূষিত জল ব্যবহার করার ফলে স্থিতিকার দারকারিতা বা অল্পতা-স্থিতিকার উৎসাহী কৃষিক্ষেত্রে-ও জীবনুর দৃষ্টি, ফলে উৎসাহী মিতর্ষ হয়, তর ফলে উৎসাহিত হ্রাস ঘাট,

৬) পানীয় জলের উপর প্রভাব:- পানীয় জলে অতিরিক্ত রাসায়নিক পদার্থ-ক্লোরিনের উৎসাহিত-স্বাস্থ্যের ক্ষতি-বিষয়-ঘটায়,

University of Kalyani

1st semester Internal Exam 2021-2022

Name: Monalisa Debnath

Reg. No: 025911

Class Roll: 21

Subject: Environmental Science (AECC)

Paper: AECC [UG-ENVS-H-AECC-02]

Department: English

Student ID: 12021ENH21

1. বায়ুদূষণের কারণ ও মনোমতের বর্ণনা করুন।

উঃ- ওয়ার্ল্ড হেলথ অর্গানাইজেশন (WHO) এর মতে পৃথিবীর বায়ুমন্ডলের স্বাভাবিক কঠোর পদার্থের অধিকতা মতন মানুষ ও তার পরিবেশের ক্ষতি করে, যেহেতু অবস্থার বায়ুদূষণ বলে।

বিশ্বব্যাপী মার্কিন যুক্তরাষ্ট্রের মতে বায়ুদূষণের ব্যাপকতা অবশ্যই বন্ধ।

☐ বায়ুদূষণের কারণ :-

বায়ুদূষণের কারণকে দু'ভাগে ভাগ করা হয় →

(i) প্রাকৃতিক কারণ

(ii) অপ্রাকৃতিক কারণ

● প্রাকৃতিক কারণ :-

(i) অক্সিজেনের মতল নিষ্কৃত জালকণার জন্য অক্সাইড (SO_2),
কারণ মনোঅক্সাইড (CO), হাইড্রোজেন সালফাইড গ্যাস (H_2S),
প্রাকৃতিক মিশ্র বায়ুদূষণ করে।

(ii) বিভিন্ন জৈব ও অজৈব পদার্থের বিয়োজন বা পচনের মতল স্মর্ট
গ্যাস বায়ুদূষণের কারণ।

(iii) দূষণ, বৃষ্টিপাত এবং অন্য বায়ুদূষণ হয়।

(iv) জাহাজ, ব্যাকটেরিয়া ইত্যাদির জন্য বায়ুদূষণ হয়।

● অপ্রাকৃতিক কারণ :-

(i) খনি খননের বৃষ্টিপাত, বৃষ্টিপাত, জিল্পিত বৃষ্টি, বালি
বৃষ্টি, বোমা ইত্যাদি মতল বায়ুদূষণ হয়।

(ii) মাটি কাঠালোর মতল, স্ত্রী ও বিমানের অধিকতা বায়ুদূষণের জন্য দায়ী।

(iii) ব্যাপকভাবে তরলীভবন করার ক্ষমতা অধিকায়িত ও কঠিন ভাঙ্গি
অক্সাইড পারমাণবিক ভারসাম্যের শক্তি ও কঠিন ভাঙ্গি অক্সাইডের
সামান্য বৃদ্ধিতে বায়ুদূষণ হয়।

(iv) মানবদেহ ও কলকরখানা থেকে নির্গত গ্রাস এবং সন্ধান,
সেউয়েল বিভিন্ন জ্বালানীর দহন থেকে বায়ুদূষণ হয়।

☐ বায়ুদূষণের সমস্যাগুলি :-

প্ৰকৃতিতে বিভিন্ন উদ্ভিদ ও প্রাণীর উন্নয়ন বায়ুদূষণের প্রভাব
বর্তমান,

• উদ্ভিদের উন্নয়ন প্রভাব :-

(i) ওজোন গ্যাসের সৃষ্টির ক্ষমতা অতিরিক্ত UV রশ্মির প্রভাব উদ্ভিদের
উৎপাদন ক্ষমতা হ্রাস পায়।

(ii) অতিরিক্ত SO_2 এর প্রভাব বিভিন্ন তরলীভবন ক্ষমতা হ্রাস হয় থাকে,

(iii) অতিরিক্ত HF_2 এর প্রভাব উদ্ভিদের পাতা বনশীল হয়।

(iv) ট্রায়াইড সৃষ্টির ক্ষমতা খনিজ মৌলের আয়তন নষ্ট হয়।

• প্রাণীদের উন্নয়ন প্রভাব :-

(i) বায়ুদূষণের প্রভাব বিভিন্ন বিস্ময় পদার্থ পক্ষুণের খাদ্যের সাথে
মিশ্রিত প্রাণীদের ক্ষতিসাধন করে।

(ii) বায়ুদূষণের প্রভাব প্রাণীদের আয়বসংক্রান্ত বিভিন্ন রোগ দেখা যায়।

(iii) সূর্যরশ্মির প্রভাব প্রাণীদের জন্মকাল, বিভিন্ন প্রাণীদের দাঁতের
ক্ষতি হয়।

(iv) বায়ুদূষণের প্রভাব প্রজনন ক্ষমতা হ্রাস প্রভৃতি দেখা যায়।

Name - Annab Mondal

Reg no - 029586

Sem - II

Subject - Environment science

class Roll - 27

Paper - PCC

Department - B.S.C General

1.) জলদূষণের কারণ ও ফলাফল বর্ণনা করো।
(Describe the causes and impact of water pollution)

Ans: →

জলদূষণের কারণ :-

জলদূষক - বিভিন্ন উৎস থেকে নির্গত যে সব পদার্থ/জলকে দূষিত করে সেগুলিকে কয়েকটি শ্রেণীতে ভাগ করে আলোচনা করা যেতে পারে।

1.) বিভিন্ন জৈব পরিপোষক - মানুষ ও প্রাণীর বর্জ্য পদার্থ ও অন্যান্য জৈব আবর্জনা, পলি প্রুষ্টি।

2.) অজৈব পরিপোষক - নাইট্রোজেন, ফসফরাস, সিলিকার জৈব প্রুষ্টি।

3.) রাসায়নিক - বিভিন্ন ব্যাকটেরিয়া, জাইরাস, প্যারাজাইট প্রুষ্টি।

4.) জৈব দূষক - কীটনাশক, পলিগ্লোরিনোয়েড, বাইফিনাইল প্রুষ্টি।

নর্দমা দূষিত জল - জলদূষণের প্রবীন কারণগুলির মধ্যে অন্যতম হল নর্দমা বা নিষ্কাশি ব্যবস্থার মাধ্যমে দূষিত জলকে সরাসরি নদী বা অন্যান্য জলাশয়ে ফেলে দেওয়া। এই নিষ্কাশি জলের মাঝে থাকে মানুষ ও অন্যান্য প্রাণীর বর্জ্য পদার্থ গ্রাহ্যের অবশিষ্টাংশ, কাপড় পরিষ্কারের দূষিত জল, সিলিকার জৈব ও রক্ত প্রুষ্টি জলদূষক অজৈব রাসায়নিক ও অনির্জ পদার্থ - স্রনি ও সিলিন্দ্র কারণে থেকে নির্গত বর্জ্যের মাঝে থাকে অ্যামিন, স্রনিজ তেল ও অপরী বাঁধ জলদূষণের অন্যান্য স্রুষ্টিপূন উৎস।

অপরী বাঁধ স্রুষ্টিপূন - আর্সেনিক, বেসাল্ট - কপার প্রুষ্টি জলের মাঝে মিশে জলকে দূষিত করে।

জিন্দগিক জীব জোতা জমুৱ - বিভিন্ন বঁৱনেৰ জিন্দগিক জীব জোতা জুলি জলদূষণেৰ উৎস হিছাবে বগাও কৰে। এই বঁৱনেৰ জিন্দগিক জলদূষণেৰ উৎস জুলি - জুলানি, প্লাষ্টিক তলু, ডাবক, ডিটারজেন্ট, পোনেৰ বৰ্ত, শুষ্ক প্ৰদূষিত।

বৃত্তজিক্ত ব্ৰজ্য - পাবমানিক বিদ্যুৎ কেন্দ্ৰ থেকু উৎপন্ন বৃত্তজিক্ত ব্ৰজ্য পদাৰ্থ জুলি মূলতঃ বৃত্তজিক্ত ব্ৰজ্য হুয়, যা বীৰে বীৰে বৃত্তজিক্ত জলেৰ জাথে জিন্দগিত হাথ জৌমজলকে হুযিত কৰে দেয়।

জলদূষণেৰ ফলস্বল :-

জলবাহিত বোজ - হুযিত জল থেকু বিভিন্ন জলবাহিত বোজ জুলি হুযিয়ে জাকে, চেমন কলেৰা, জামাৰা, জিন্দগিত, হাইজেনেড, ফল্গা প্ৰদূষিত।

পোচেৰ জমুয় - জলেৰ জাৰিয়ামে বিভিন্ন হুযিত পদাৰ্থ জামাদেৰ জাৰীৰে জিন্দগিত হলে বিভিন্ন বঁৱনেৰ পোচেৰ জমুয়, ক্যান্গাৰ ও পোষিব কণ্ঠিন্য যুক্ত জমুয় জমুয় হুয়।

ফুজফুজেৰ কণ্ঠানসাৰ - অগ্ৰাৰেজেন্ট জাতীয় জমুয় জমুয় হুয়ে পানীয় ও জাদেৰ জাৰিয়ামে জীবদেহে জবেশ কৰে। জমুয় জমুয় অগ্ৰাৰেজেন্ট জাতীয় জমুয় জমুয় হুয়ে জল ব্ৰহ্মাৰেৰ ফলে মানুহেৰ জাৰীৰে এক প্ৰকণেৰে কণ্ঠানসাৰেৰ জমুয় হুয়।

ফুকেৰ বোজজমুয় - জাৰ্জেনিক জলে জমুয় জমুয় হুয়ে পানীয় ও জাদেৰ জাৰিয়ামে জীবদেহে জবেশ কৰে। জাৰ্জেনিক জমুয় জমুয় হুয়ে জমুয় ও পোচেৰ পাঠায় কালো দে

ইউট্রোফিকেশন :-

জলে নাইট্রেট জাতীয় স্ট্রব ও অক্সিজেন পরিপোষণের পরিমাণ বৃদ্ধি হলে বিভিন্ন প্রকার জলজ উদ্ভিদ, যেমন কুম্ভিরপানা জাতীয় উদ্ভিদ উদ্ভাটিকিত হারে বাড়ে। যার ফলে জলে বসবাসকারী প্রাণীদের প্রয়োজনীয় অক্সিজেন পরিমাণ কমে যায় এবং জলা জগতি কমে মরে নষ্ট হয়ে পড়ে, একেই ইউট্রোফিকেশন বলে।

মৃত্তিকার মৃত্তি :-

মৃত্তিকার মৃত্তি মরনতা হলে জল-ব্যবহারের ফলে মৃত্তিকার মৃত্তির পরিমাণ বৃদ্ধি পায়, ফলে জমি মরন উৎপাদনের জন্য অক্ষম হয়ে পড়ে।

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Describe the causes & impact of air pollution.

Ans Air pollution occurs due to the presence of undesirable solid or gaseous particles in the air in quantities that are harmful to human health & the environment.

Pollutants that are emitted directly from identifiable sources are produced both by natural events (dust storms & volcanic eruptions) and human activities (emission from vehicles, industries, etc).

These are primary pollutants. These are carbon oxides (CO & CO_2), nitrogen oxides, sulfur oxides, organic compounds (mostly hydrocarbons) & suspended particulate matter.

When certain chemical reactions take place between primary pollutants secondary pollutants are produced. Eg - Sulfuric acid, nitric acid, carbonic acid, etc.

Vehicular exhausts are the largest source of carbon monoxide. Sulfur oxides are produced when sulfur containing fossil fuels are burnt.

Nitrogen oxides are found in vehicular exhausts.

Hydrocarbons either evaporate from fuel that supplies or are remnants of fuel that did not burn completely.

Particulates are produced from fires, bits of asbestos, dust & ash from industries.

Lead is emitted by vehicles.

Impact of air pollution —

When sulphur dioxide & nitrogen oxides form secondary pollutants such as nitric acid vapour, droplets of sulphuric acid; this results in acid deposition, commonly called acid rain. These can harm the plants & animals along with the corrosion of monuments.

Diseases such as lung cancer, asthma, chronic bronchitis & emphysema can occur in human beings due to longer exposure to pollutants.

In plants it can interfere with photosynthesis & plant growth, reduce nutrient uptake & causes leaves to turn yellow or drop off.

Air pollutants discolour irreplaceable monuments, historic buildings, marble statues, etc.

Air pollutants breakdown ozone & lead to ozone layer depletion due to which the harmful radiations of the sun can directly reach the living beings & cause problems like skin cancer, cataract, etc.

Pollution also contributes to global warming, a phenomenon which is caused due to increase in concentration of certain gases like CO_2 , NO_x , CH_4 & CFCs. These gases lead to 'green house effect' & these further leads to melting of glaciers, floods, & rise in ocean levels.