



GOVERNMENT OF WEST BENGAL
OFFICE OF THE PRINCIPAL
Maulana Azad College
8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com

Website: <https://maulanaazadcollegekolkata.ac.in>

**Activities under MoU between Maulana Azad College, Kolkata 700013 and Muslim Institute,
Kolkata 700 126**

Start date of MoU: 16.06.2023

End date of MoU: Continuing

Duration: 5 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	Sharing of infrastructure and resources				
	Library	19/06/23	Continuing	Muslim Institute	25
	Gymnasium	10/08/2023	Continuing	Muslim institute	62



Nisar Ahmed
Hony General Secretary
The Muslim Institute

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Report on the activities under MoU between Maulana Azad College Kolkata and Muslim Institute, Kolkata for joint organization of seminars/workshops and sharing of infrastructural facilities

- **DATE of SIGNING THE MOU: 16.06.2023**
- **OBJECTIVE/ PURPOSE:**
 - Arrangement of special lectures by faculty/Expertise to share their expertise
 - Participation in seminars, symposium, and other types of academic discussions
 - Student visit to library and gymnasium
 - Joint sharing of infrastructural facilities such as seminar auditorium.
- **TARGET AUDIENCE/ PARTICIPANTS:** Students and faculty members of both Institutes
- **VENUE:** Muslim Institute and Maulana Azad college
- **EXPECTED OUTCOME:**
 - Fostering of academic excellence through mutual collaboration and providing access to student resources including




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Yearwise report of Activity

1. Name of the Activity- Sharing of infrastructure and resources

Use of the library of Muslim Institute by students of Maulana Azad College

Students have been using the library of the Institute to access the treasure trove of documents and informations of Indian literature and language.

Date of Initiation of activity: 19.06.2023

Number of students who participated – 25

Representative pictures



Nisar Ahmed
Nisar Ahmed
Hon'y General Secretary
The Muslim Institute

[Signature]
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1. Name of the Activity- Sharing of infrastructure and resources

Use of the Gymnasium of Muslim Institute by students of Maulana Azad College

Students have been using the well-equipped Gymnasium of the Institute for staying fit and strong

Date of Initiation of activity: 10.08.2023

Number of students who participated – 62

Representative picture of students playing Table tennis at the gymnasium facility



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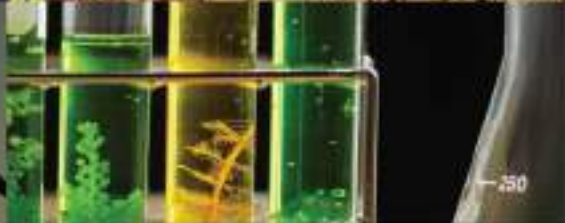


Representative pictures of students using the gymnasium facility



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The Muslim Institute

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Biofuels

Scientific Explorations and Technologies
for a Sustainable Environment

EDITED BY
Samudra Prosad Banik
Debasis Bagchi



CRC Press
Taylor & Francis Group

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19 Biofuel from Algae

The Long Road to Commercial Viability

Biprojit Singha Roy, Priyanjana Nath, Sanmitra Ghosh, Arpita Das, and Rajib Majumder

19.1 INTRODUCTION

Biofuel is a cost-effective, environment-friendly, safe fuel that is produced from various renewable sources, like vegetable oil, woodchips, lignocellulosic crops, and also from various species of algae and cyanobacteria. The classification of biofuels and their production output from different lignocellulosic crops, microalgae, and macroalgae will all be covered in the current study. There is also proper discussion about the possible biofuel production pathway, algal biomass production, and harvesting methods. We will go over the procedure for extracting the oil and turning it into biofuel. In addition to vegetable oil, LCB, and algae, we have also explored cyanobacteria whose various species can be utilized for biofuel production. We have also covered the cutting-edge technology of CRISPR-based genetic editing in cyanobacteria for enhanced biofuel production. A techno-economic study to determine the commercial viability of algal biodiesel production is presented at the end of this chapter, along with opportunities and challenges linked to biofuel production and the biofuel sector. This report goes into great detail on all the most recent research developments about the aforementioned subjects.

19.2 THE GLOBAL NEED FOR BIOFUELS IN THE TWENTY-FIRST CENTURY

“Biofuel” – the term refers to the liquid fuels and associated blending components that are produced from biomass material called feedstocks. On the other hand, *fossil fuels* are fuels that are produced from decomposed plants plankton and animals that decompose to form natural gas and coal after about 150 million years. Currently, our world runs in fossil fuel mostly, and burning fossil fuel emits about 33 billion tons of CO₂ per year worldwide (*International Energy Agency, Data, and Statistics*). The major threat of increasing CO₂ is the greenhouse effect, where excessive CO₂ creates a cover (CO₂ has molecular mass = 44.01 g/mol and of air has molecular mass = 28.96 amu) which traps the heat energy from the sun and increases the temperature on Earth; as a result, glaciers and icebergs have started melting, and water level on Earth is increasing. Biofuels can replace fossil fuels and can reduce the greenhouse effect by about 41% compared to fossil fuel burning utilizing biodiesel (Hill et al., 2006). It can also reduce the depletion of exhaustible resources and reliance on unsteady international traders. Need for biofuels could also elevate farm income, because first-generation biofuels are made from sugar crops like sugarcane and sugarbeet, starch crops like corn and sorghum, and oilseed crops like canola, soybean, and animal fats. Second-generation biofuels refer to cellulosic biofuels, which are produced from cellulose and are obtained from non-food crops and waste biomass, such as corncobs, corn stover, wood, straw, and wood by-products. Third-generation biofuels employ algae as a raw material for biofuel (Fischer et al., 2009).

Amid late 1900s, due to the increase in crude oil (fossil fuel) prices and worries over security of the energy, the USA and numerous European nations created different policies which boosted the biofuel industries, plans for climate change alleviation, and diminish GHG emissions from the



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Activities under MoU between Maulana Azad College, Kolkata 700013 and

Government College of Art and Craft, Kolkata 700016

Start date of MoU: 22.01.2024


End date of MoU: Continuing

Duration: 3 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Faculty Exchange programme</u> Mrs. Swati Chakraborty, Associate Professor, Dept. of Bengali, Maulana Azad College took classes of Sem II AECC 2.1, MIL-Bengali	4.07.2024	4.07.2024	Government College of Art and Craft	100 from Government College of Art and Craft.
		05.07.2024	05.07.2024		
2.	<u>Faculty Exchange Programme</u> Mrs. Pritha Chakrabarty, Associate Professor, Dept. of English, Maulana Azad College took classes of Sem II AECC 2.1, Alternative English	04.07.2024	04.07.2024	Government College of Art and Craft	25 from Government College of Art and Craft.
		05.07.2024	05.07.2024		



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**Report on the activities under MOU for Academic Collaboration between
Maulana Azad College Kolkata and Government College of Art and
Craft, Calcutta (Kolkata).**

➤ **Date of Signing the MOU:** 22.01.2024

➤ **Objective:**

Initiate an academic Collaboration between departments of Maulana Azad College and Government College of Art and Craft which would benefit the students and faculty members of both the institutions in their pursuit of academic excellence.

➤ **Target Participants:** Students and faculty members of both Institutions.

➤ **Venue:** Maulana Azad College and Government College of Art and Craft

➤ **Expected Outcome:**

Students and faculty members of both Institutions will be benefited in terms of their academic pursuit in several areas by organizing joint Seminar/Workshop/Conference, Student exchange programme, Faculty exchange programme, Social outreach programmes etc.

➤ **Report of activity carried out under MoU**

Name of the activity: Faculty Exchange Programme

Date: 4.07.2024 and 5.07.2024


Venue: Government College of Art and Craft

Details of the activity:

As attached



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Date	Department and College	Semester	Course Code	Teachers Involved	Affiliating College	Number of students
04.07.2024 and 5.07.2024	Department of Bengali, Government College of Art and Craft	II	AEC 2.1 (Bengali under MIL)	Mrs. Swati Chakraborty, Associate Professor	Dept. of Bengali, Maulana Azad College	100
04.07.2024 and 05.07.2024	Department of Bengali, Government College of Art and Craft	II	AEC 2.1 (Alternative English)	Mrs. Pritha Chakraborty, Associate Professor	Dept. of English, Maulana Azad College	25

Certificates from Principal, Government College of Art and Craft to Mrs. Swati Chakraborty and Mrs. Pritha Chakrobarty


Govt. of West Bengal
Office of the Principal, Govt. College of Art & Craft, Kolkata.
28 Jawaharlal Nehru Road, Kolkata- 700 016.
Phone no: 2242-3186, 2251-0029 and 2245-3479(Fax)
Email ID: principal@maulanaazadcollegekolkata.ac.in

Office Memo No. 0226/AT/24 Date: 13.07.2024

From:
The Principal,
Govt. College of Art & Craft, Kolkata.
28, Jawaharlal Nehru Road
Kolkata 700016.

To:
Ms. Swati Chakraborty,
Associate Professor,
Maulana Azad College,
8, Rafi Ahmed Kidwai Road, Tintale,
Kolkata 700013.

Dear Ms. Swati Chakraborty,

This is to acknowledge your gratitude for having given this institution the necessary support in accordance to the MoU between your esteemed institution & ours, in fulfilling the requirements of the AEC 2.1 Course (Alternative English MIL) for 100 (Hundred) of our students opting the Bengali in the 2nd Semester by taking Offlines as well as Online classes for the required number of contact hours as mentioned in our CBSE.

In appreciation of further such cooperation's between our institutions & thanking you again for your valuable time and dedication, warm regards.

Yours sincerely,


13.07.2024
Principal,
Govt. College of Art & Craft, Kolkata


Govt. of West Bengal
Office of the Principal, Govt. College of Art & Craft, Kolkata.
28 Jawaharlal Nehru Road, Kolkata- 700 016.
Phone no: 2242-3186, 2251-0029 and 2245-3479(Fax)
Email ID: principal@maulanaazadcollegekolkata.ac.in

Office Memo No. 0226/AT/24 Date: 13.07.2024

From:
The Principal,
Govt. College of Art & Craft, Kolkata.
28, Jawaharlal Nehru Road
Kolkata 700016.

To:
Ms. Pritha Chakraborty,
Associate Professor,
Maulana Azad College,
8, Rafi Ahmed Kidwai Road, Tintale,
Kolkata 700013.

Dear Ms. Pritha Chakraborty,

This is to acknowledge your sincere gratitude for having given this institution the necessary support in accordance to the MoU between your esteemed institution & ours, in fulfilling the requirements of the AEC 2.1 Course (Alternative English MIL) for 25 (Twenty Five) of our students opting for English in the 2nd Semester by taking Offlines as well as Online classes for the required number of contact hours as mentioned in our CBSE.

In appreciation of further such cooperation's between our institutions & thanking you again for your valuable time and dedication, warm regards.

Yours sincerely,


13.07.2024
Principal,
Govt. College of Art & Craft, Kolkata



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Geotagged photographs of the class





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Activities under MoU between Maulana Azad College, Kolkata 700013

and Asutosh College, Kolkata 700026

Start date of MoU: 24.05.23

End date of MoU: Continuing

Duration: 5 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Faculty Exchange Programme</u>	9.06.23	9.06.2023	Maulana Azad College	24
	Dr. Siddhartha Kar, Associate Professor, Dept. of Sociology, Asutosh College took classes of UG Sem V students of Sociology Dept. of Maulana Azad College	16.06.23	16.06.23		23
		23.06.23	23.06.23		27
	<u>Participation of students in Add-on course</u>	7.08.23	11.08.23	Maulana Azad College	19 (5 from Asutosh College and 14 from Maulana Azad College)
	“Hands-on training on biomedical techniques”, conducted by the Department of Zoology, Maulana Azad College, Kolkata.				

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**Report on activities carried out under MOU signed between Maulana Azad College,
Kolkata-13 and Asutosh College, Kolkata 700026**

➤ **DATE of SIGNING THE MOU:** 24.05.2023

➤ **OBJECTIVE/ PURPOSE:**

Initiate an academic Collaboration between different departments of the two colleges which would benefit the students and faculty members of both the institutions in their pursuit of academic excellence through Faculty exchange Programmes, Student Exchange Programmes, Remote usage of Library as well as through organization of collaborative workshops, seminars and joint research activities.

➤ **REPORT OF COLLABORATIVE ACTIVITY CARRIED in 2022-23:**

1) Faculty Exchange Programme

Sri. Siddhartha Kar, Associate Professor, Dept. of Sociology took online classes of the Semester V students of Sociology Dept., Maulana Azad College, as per details given in the following table. Dr. Shampa Dutta Gupta, Associate Professor, Maulana Azad College Sri Kar to the students before the classes.

➤ **VENUE: Google Meet platform of Maulana Azad College domain Gsuite**

Sl No.	Title of the programme	Date	Topic/s taught	Convenor/Teachers involved	Semester	No. of students
1.	Faculty Exchange Programme in Sociology for online classes	9/06/23	Indian sociological thinkers: R.K. Mukherjee	Dr. Siddhartha Kar, Associate Professor	V	24
2.	Faculty Exchange Programme in Sociology for online classes	16/06/23	Indian sociological thinkers D.P. Mukherjee	Dr. Siddhartha Kar, Associate Professor	V	23
3.	Faculty Exchange Programme in Sociology for online classes	23/06/23	Indian sociological thinkers: M.N. Srinivas	Dr. Siddhartha Kar, Associate Professor	V	27

Shampa Dutta Gupta

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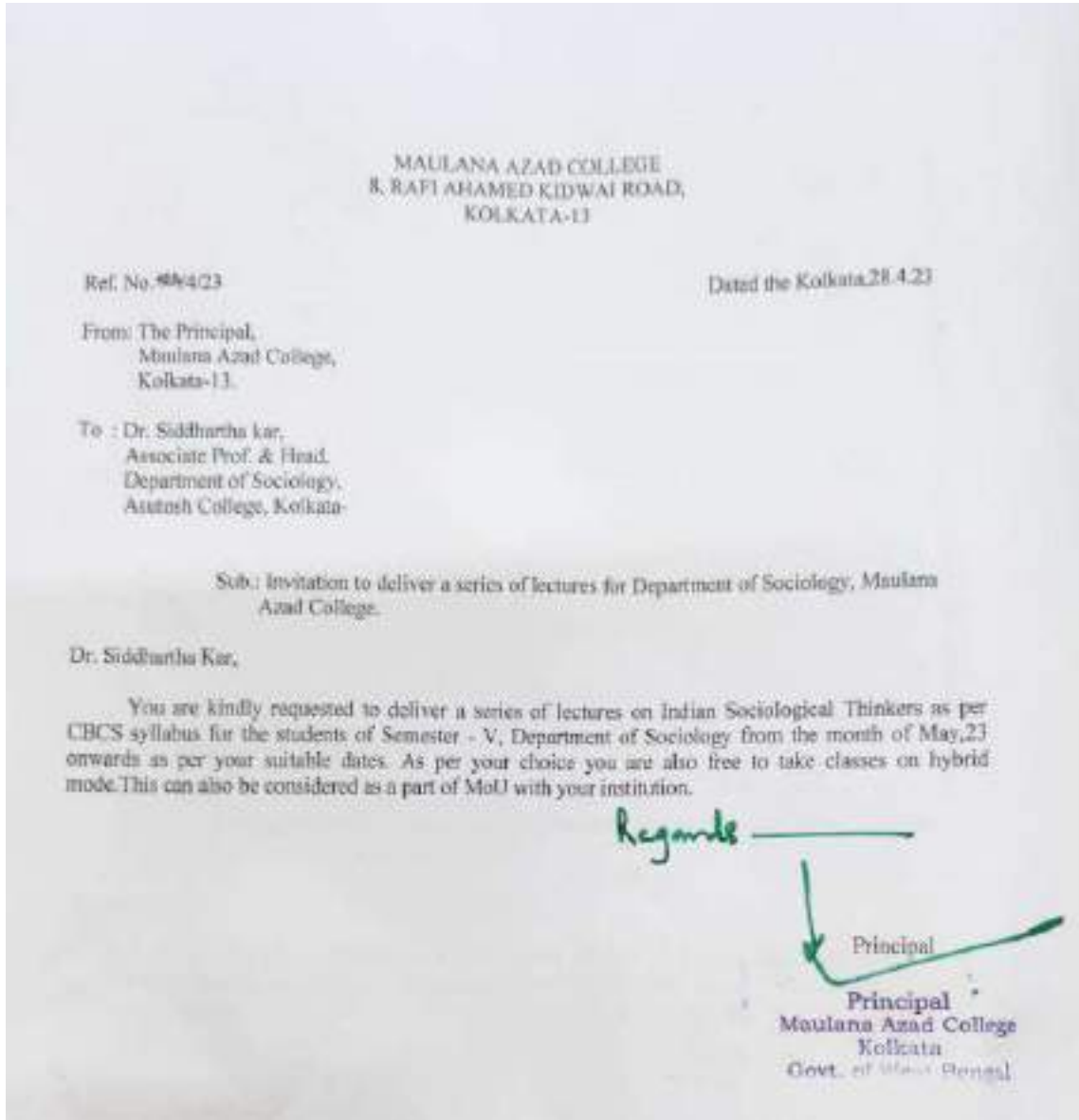


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Invitation letter to Dr. Siddhartha Kar for taking classes from Principal, Maulana Azad College



Hamas Kabir

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Hamas Kabir
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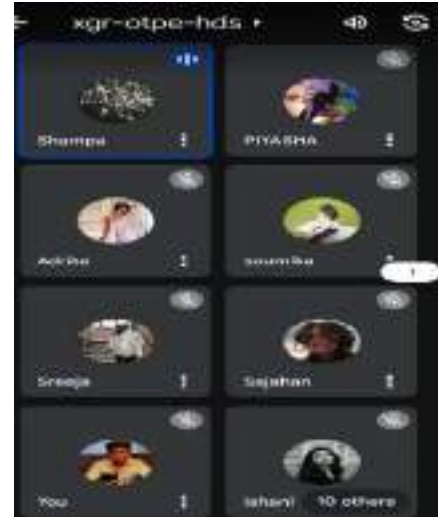
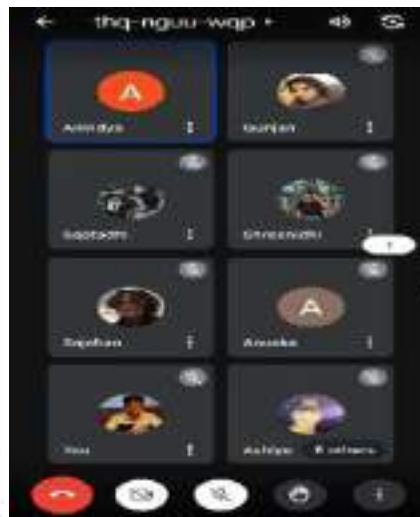


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Representative Screenshots of the online classes taken by Sri. Siddhartha Kar



Siddhartha Kar

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2) **HANDS ON TRAINING ON BIOMEDICAL TECHNIQUES** as a part of the Add-on course between Department of Zoology, Maulana Azad College and Dept. of Zoology, Asutosh College. Students of Victoria Institution also participated in the said programme.

Date of the event: 7th August, 2023 to 11th August, 2023

VENUE: Postgraduate Department of Zoology, Maulana Azad College

OBJECTIVE/ PURPOSE: To provide hands on training on biomedical techniques

SPEAKER/S / RESOURCE PERSON/S:

1. Prof. Subir C. Dasgupta
2. Dr. Dipak Kumar Som
3. Dr. Sushanta Roy Karmakar
4. Dr. Sujit Kumar Bhowal
5. Dr. Rajarshi Ghosh
6. Dr. Abhishek Mukherjee
7. Dr. Nabanita Ghosh

TARGET AUDIENCE/ PARTICIPANTS: Students of Undergraduate and Postgraduate Studies from all three institutions

BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

DAY 1: Welcome address by Prof. Subir Ch. Dasgupta, HOD, Department of Zoology, Maulana Azad College and Dr. Dipak K. Som, IQAC Co-Ordinator, Maulana Azad College followed by Hands on training on “Determination of Some Haematological Parameters” by Dr. Rajarshi Ghosh, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 2: Hands on training on “Effect of pH on Enzyme Activity” by Dr. Abhishek Mukherjee, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 3: Hands on training on “Mitotic Chromosome Preparation from Bone Marrow of Albino Rat (*Rattus sp.*)” by Dr. Susanta Roy Karmakar, Associate Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

Day 4: Hands on training on “Restriction endonuclease digestion and demonstration”

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Website: <https://maulanaazadcollegekolkata.ac.in>

by Dr. Sujit Kumar Bhowal, Associate Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

Day 5: Hands on training on “RNA isolation from animal tissue using Trizol reagent” by Dr. Nabanita Ghosh, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

EXPECTED OUTCOME: Students have been entrained through this hands-on training so that they can perform these experiments themselves. The knowledge they have gathered in their theoretical classes were demonstrated in front of them for a better understanding.

Number of participants: Students- 24, Faculty members as resource persons-7

**PARTICIPANTS FROM ASUTOSH COLLEGE, DEPARTMENT OF ZOOLOGY
(SEM VI)**

Sl. No.	Name	Email id
1	Aishali Pal	aishalipal@gmail.com
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Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
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DEPARTMENT OF ZOOLOGY (SEM VI)**

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Hanar Kabir

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14	Deepsikha Mitra	deepsikha.mitra.1996@gmail.com
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Sl. No.	Name	College Roll no	Gmail
1	BONY KUNDU	1115	bonyk2618@gmail.com
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3	ANTIMA PAL	1147	palantima223@gmail.com
4	SUDESHNA DAS	1248	sudeshnadasmishtu@gmail.com
5	DEBASMITA GHOSH	1260	ghoshdebasmita2002@gmail.com

Manab Kabi

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Copy of Departmental notice and resolution regarding the workshop

Maulana Azad College, Kolkata
Post Graduate Department of Zoology
Notice

No.Z/Ozo/73 Dated: 05.6.2023

This is to notify that a DC meeting will be held on 9.6.23 at 12.15 pm in the departmental room to discuss the following agenda:

1. Workshop for the session 2022-2023
2. Matters arising.

All interested colleagues are requested to attend the meeting.


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Maulana Azad College
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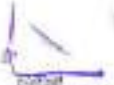

Department of Zoology
HEAD
P.G. Department of Zoology
Maulana Azad College
Govt. of West Bengal
Kolkata - 700013


1.  9/6/23
2.  9/6/23
3.  9/6/23
4.  9/6/23
- 5.
- 6.

Maulana Azad College, Kolkata
Post Graduate Department of Zoology

Resolution adopted in the meeting:

1. An add-on Course on "Hands-on Training on Biomedical techniques" will be offered for UG Semester 1 students (both in-house and external students) which will be of 50 hours duration.
2. Time schedule: 7th August, 2023 to 11th August, 2023, from 11:00 am to 4 pm.
3. It has been resolved that Dr. Sasana Roy Karanika, Dr. Abhishek Mishra, Dr. Rajmishri Ghosh, Dr. S.E. Bhawal and Dr. Nabanta Ghosh, faculty members of this department will act as Resource person for the aforementioned course.
4. The Syllabus framed by the faculty has also been approved.


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Photographs from the workshop



Hanar Kabir

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**Activities under MoU between Maulana Azad College, Kolkata 700013 and
Barasat Govt College, Barasat, Kolkata 700124**

Start date of MoU: 13.06.2023

End date of MoU: Continuing

Duration: 5 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Collaborative Research programme</u> Prof. Timir Baran Jha, Retd. Professor and Guest Teacher, Dept. of Botany, Maulana Azad College and Dr. Mihir Halder, Assistant Professor, Dept. of Botany, Barasat Govt. College	16.02.21	Continuing till date	Maulana Azad College	2
2.	<u>Faculty Exchange Programme</u> Sri Ganapati Bhattacharya, Associate Professor and Head, Dept. of Political Science, Barasat Govt. College, took classes of Sem II and Sem IV Hons. students of the Dept. of Sociology, Maulana Azad College on Nehru: Views on Socialism and Democracy and Administrative Processes (Decision making) respectively.	15.06.23	15.06.23	Maulana Azad College	32 students of Maulana Azad College attended the class (9 from Sem IV and 23 from Sem II)
3.	<u>Faculty Exchange Programme</u> Dr. Onkar Nath Pathak, Associate Professor and Head, Dept. of Sanskrit, Maulana Azad College, took classes of Sem-II and Sem IV Hons students of the Dept. of Sanskrit, Barasat Govt. College on Sanskrit Grammar and Translation-Pratyayas and Karaka respectively	27.06.2023	27.06.23	Barasat Govt. College	40 students of Barasat Govt. College attended the class (19 from Sem II and 21 from Sem IV)


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Report on the activities under MOU for Academic Collaboration between Maulana Azad College Kolkata and Barasat Govt. College.

➤ **Date of Signing the MOU:** 13.06.2023

➤ **Objective:**

Initiate an academic Collaboration between departments of Maulana Azad College and Barasat Govt. College which would benefit the students and faculty members of both the institutions in their pursuit of academic excellence.

➤ **Target Participants:** Students and faculty members of both Institutions.

➤ **Venue:** Maulana Azad College and Barasat Govt. College.

➤ **Expected Outcome:**

Students and faculty members of both Institutions will be benefited in terms of their academic pursuit in several areas by organizing joint Seminar/Workshop/Conference, Student exchange programme, Faculty exchange programme etc.

➤ **Report of activity carried out under MoU**

1. **Name of the activity:** Collaborative Research between Dept. of Botany, Maulana Azad College and Dept. of Botany, Barasat Govt. College

Faculty members engaged in collaborative research

1. Professor Timir Baran Jha, Professor and Guest teacher, Dept. of Botany, Maulana Azad College
2. Dr. Mihir Halder, Assistant Professor, Dept. of Botany, Barasat Govt. College



Brief Report of the Activity:

A Report on the Collaborative Research Work Outcomes between Department of Botany, Maulana Azad College and Department of Botany, Barasat Government College

This report summarizes the outcomes of the collaborative research work between two faculties of the Department of Botany, Maulana Azad College and Department of Botany, Barasat Government College in the field of plant molecular cytogenetics. Under the scheme of collaborative research work, We, i.e., Dr. Mihir Halder, Assistant Professor of Botany of Barasat Government College and Prof. Timir Baran Jha, Retired Professor of Botany and Guest Faculty, Department of Botany, Maulana Azad College working together since 2021 onwards. We are interested in plant molecular cytogenetics to decipher several chromosomal features which are not detected through the classical method of chromosome preparation and staining techniques. Enzymatic maceration and air drying (EMA)-based Giemsa holds significant promise for understanding different karyomorphological features of plant chromosome by reveal number, positions, and pattern of landmark secondary constrictions. In addition, chromosome staining with 4'-6-diamidino-2-phenylindole (DAPI) and chromomycin A3 (CMA) flurophore very effective in decoding unique fluorescent banding pattern of chromosome in genome. Decoding of the genomic diversity at chromosomal level is expected to be beneficial for plant breeders and genome researchers in both conventional and innovative breeding programs.

Plant Materials:

We performed chromosomal studies of (i) 22 populations of traditional aromatic rice cultivars of India, (ii) two wild and one horticulture populations of *Gloriosa*, (iii) *Allium cepa*, (iv) *Allium sativum*, (v) *Nigella sativa*, (vi) *Trigonella foenum-graecum L.*, and (vi) *Aloe vera*.

Methodology:

For plant molecular cytogenetics study of various Indian species and their germplasm, following species- or population-specific methodologies have been performed.

- (i) Standardization of EMA protocol for chromosome preparation
- (ii) Standardization and Giemsa staining
- (iii) Standardization of fluorescent staining of chromosomes with 4'-6-diamidino-2-phenylindole (DAPI) and chromomycin A3 (CMA)



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(iv) Digital documentation of cytoplasm-free metaphases under a Carl Zeiss AxioLab A1 microscope fitted with a CCD (charge-coupled device) camera and computer.

(v) Measurement and analysis of various karyomorphometric data (the lengths of the long and short arms, the positions of the centromeres, the average chromosome length, and the total chromatin length, number and position of fluorescent signals) using Axiovision L. E4 software.

(vi) Statistical analysis of chromosomal data using SPSS software (version 16.0)

Key Findings:

This collaboration yielded a number of significant findings, including:

(i) Detection of some unique and foundational karyomorphological features of 22 populations of traditional rice cultivars of Indian using EMA-based Giemsa, DAPI, and CMA staining. It includes the diversity in staining pattern, total chromatin length, morphology of individual and landmark sat-bearing chromosomes in each cultivar, intraspecific sat-bearing chromosome number in several cultivars, the karyotype formula, and the effect of DAPI on sat-bearing chromosomes.

(ii) Detailed karyomorphological analysis including somatic chromosome number, number and locations of secondary constrictions of two wild populations of *Gloriosa superba* and one horticulture population of *Gloriosa* using EMA-based chromosome preparation followed by Giemsa, DAPI, and CMA staining.

(iii) Comparative fluorescent banding pattern studies of *Allium cepa*, *Allium sativum*, *Nigella sativa*, *Trigonella foenum-graecum*, and *Aloe vera* highlight the enormous divergence of centromeric sequences within and between the karyotypes.

Outcomes and Impact:

The collaborative research activity has resulted in several positive outcomes:

(i) **Publications:** The findings have been disseminated through publications (1 published, 1 accepted, 1 communicated) in international peer-reviewed scientific journals, contributing to the advancement of knowledge in plant molecular cytogenetics.

I. Jha, T.B., Halder, M. (2023) Evaluation of karyotype diversity in Indian traditional aromatic rice cultivars through EMA-based non-fluorescent Giemsa and fluorescent DAPI staining. Genet Resour Crop Evol 71:1379-1400. <https://doi.org/10.1007/s10722-023-01696-4>



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2. Jha, T.B., Chakroborty P., Halder, M. (2024) Karyotype analysis on *Gloriosa superba* using enzymatic maceration and air-drying-based Giemsa, DAPI, and CMA staining techniques. *Cytologia* (accepted on 19/05/2024)

3. Timir Baran Jha, Mihir Halder, Biplab Kumar Bhowmick (2024) Giemsa-based chromosome staining and Comparative Fluorescence Banding pattern in six valuable Indian plant species (communicated).

(ii) **Student Benefits:** The valuable research experience and finding have been shared among under graduate and post-graduate students during their theory and practical classes to encourage them in the field of plant molecular cytogenetics.

Future Directions:

The success of this collaboration encourages us to continue this collaborative research works. Currently we are working on decoding chromosomal landmarks in more than 20 new traditional rice populations of West Bengal. Moreover, we are planning to expand the research to a wider range of plant species.

Chatterjee

Principal
Barasat Government College

Principal
Barasat Government College

Chatterjee
Principal
Maulana Azad College

Principal
Maulana Azad College
Kolkata



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Copy of letter from Principal, Barasat Govt. College to Principal, Maulana Azad college regarding collaborative research


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BARASAT GOVERNMENT COLLEGE
POST GRADUATE DEPARTMENT OF BOTANY
10, K.N.C. Road, Barasat, Kolkata - 700134, West Bengal, India.
Phone: (033) 2552 5545, Fax: (033) 2562 5053, Website: www.bgc.ac.in, E-Mail: principal@bgc.ac.in

No. _____ Date: 16/06/2023

To
The Principal,
Maulana Azad College,
8, Rafi Ahmed Kidwai Road,
Kolkata- 700013

Subject: Requesting for using Plant Molecular Cytogenetics Lab of Maulana Azad College

Sir,

Apropos MoU activity between two colleges, I am sending herewith Dr. Mihir Halder, Assistant Professor of Botany of our college, to your esteemed college to execute his research oriented endeavor in your Plant Molecular Cytogenetics Laboratory under Dr. T.B. Jha, Retired Professor of Botany and Guest Faculty, Department of Botany, Maulana Azad College Kolkata in advancing the research programme that will contribute significantly to my college as well as the scientific community.

Sir, in this context I am requesting your good self to allow him to enjoy your Laboratory as mentioned above that can benefit the field of plant science research.

Research facilities available in the Molecular Cytogenetics laboratory at Maulana Azad College are an excellent opportunity for him in this field.

Considering the above I will be thankful if you kindly extend your permission in this regard.

With regards,

S. Chatterjee
16/6/23
Principal
Barasat Govt. College
Govt. of West Bengal



Principal,
Barasat Govt. College

S. Chatterjee
Principal
Barasat Government College
Principal
Barasat Government College

S. Chatterjee
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Maulana Azad College
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Permission from Principal, Maulana Azad College regarding the collaborative research work



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No. Nil

Date: 16/02/2021

To
The Principal,
Maulana Azad College,
8, Rafi Ahmed Kidwai Road,
Kolkata- 700013

Through
The Principal,
Barasat Govt. College,
10, K.N.C. Road, Barasat
Kolkata 700124

Permitted
[Signature]
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

FORWARDED *for favourable consideration*
[Signature]
Principal
Barasat Govt. College
16/2/21

Subject: Prayer for permission to execute Collaborative research work with the Department of Botany, Maulana Azad College, in the field of Plant Molecular Cytogenetics

Sir,

I, Mihir Halder, Assistant Professor of Botany, Barasat Government College, have deep interest in advancing my research programme that contribute to my college as well as the scientific community.

This is to bring to your kind information that I have obtained verbal permission from the Head, Department of Botany, Maulana Azad College and Dr. Timir B. Jha, W.B.S.E.S. (Retired Professor of Botany), Division of Plant Molecular Cytogenetics, Department of Botany, Maulana Azad College in executing collaborative research work in the Department of Botany, Maulana Azad College without hampering my normal college duty.

Sir, In this context I am requesting your good self to allow me to continue such collaborative research work so that both the institutes can be benefited in the field of plant science. Research facilities available in the Molecular Cytogenetics laboratory at Maulana Azad College are an excellent opportunity for me in this field. My academic association with Maulana Azad College will certainly help me to share my advance knowledge among the students of both Undergraduate and Post Graduate studies of Barasat Govt. College.

Considering the above I will be thankful if you kindly extend your permission in this regard.

With regards,

Yours faithfully

Mihir Halder
Dr. Mihir Halder

Assistant Professor of Botany
Barasat Government College

[Signature]
Head & Associate Professor
D. G. Department of Botany
Barasat Govt. College

[Signature]
Principal
Barasat Government College
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Barasat Government College

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Publications from the collaborative research project

1. Karyotype analysis on *Gloriosa superba* using enzymatic maceration and air-drying based Giemsa, DAPI and CMA staining techniques accepted in *Cytologia* (Just accepted manuscript)

<em@editorialmanager.com>
Date: 19 May 2024 at 10:18:35 PM GMT-4
To: Timir Baran Jha <tbjha2000@yahoo.co.in>
Subject: [CYTOLOGIA] Your Submission
CYTOLOGIA-D-24-00021R2
Reply-To: Mendel-Cytologia <isc-mendel-cytologia@edu.k.u-tokyo.ac.jp>

Ref.: Ms. No. CYTOLOGIA-D-24-00021R2
Karyotype analysis on *Gloriosa superba* using enzymatic maceration and air-drying-based Giemsa, DAPI, and CMA staining techniques
CYTOLOGIA

Dear Dr. Jha,

I am pleased to tell you that your work has now been accepted for publication in CYTOLOGIA.

It was accepted on 2024-05-19 22:17:57

Comments from the Editor and Reviewers can be found below.

Comments from the Editors:

Congratulation. Your articles was accepted by Cytologia. Please accept that article type is changed from Karyotype analysis to Regular article because of long article.

2. Jha, T.B., Halder, M. Evaluation of karyotype diversity in Indian traditional aromatic rice cultivars through EMA-based non-fluorescent Giemsa and fluorescent DAPI staining. *Genet Resour Crop Evol* 71, 1379–1400 (2024). <https://doi.org/10.1007/s10722-023-01696-4>

S. Chatterjee
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Principal
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S. Chatterjee
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Govt. of West Bengal



Home > [Genetic Resources and Crop Evolution](#) > Article

Evaluation of karyotype diversity in Indian traditional aromatic rice cultivars through EMA-based non-fluorescent Giemsa and fluorescent DAPI staining

Research article | Published: 09 August 2023

Volume 71, pages 1379–1400, (2023) [Cite this article](#)

[Timir Baran Jha](#) & [Mihir Halder](#)

167 Accesses [Explore all metrics](#)

Abstract

Rice serves as a primary dietary source of nutrients and calories for over half of the global human population. With India being the world's second-largest producer and largest rice exporter, it boasts a vast collection of rice germplasm. Among these, traditional aromatic rice cultivars (TARCs) occupy a prominent position. Despite the challenges posed by the small size of chromosomes and procedural limitations, karyotype analysis of rice has not received adequate attention. However, such evaluation of karyotype diversity may enrich the global gene pool, which is a prerequisite for the success of new breeding programs. The enzymatic maceration and air drying (EMA) method, a fundamental technique in molecular cytogenetics, has rejuvenated plant chromosome research by providing a cytoplasm-free background. The objective of the present study was to document, decode, and conserve the untapped karyotypic diversity in TARCs of India. Karyotype diversity was evaluated in 22 populations of TARCs using the EMA-based chromosome preparation method, followed by staining with non-fluorescent Giemsa and DNA base-specific fluorescent dye DAPI (4'-6-diamidino-2-phenylindole) for the first time. Some unique and foundational highlighting features of this study include the diversity in staining pattern, total chromatin length, morphology of individual and landmark sat-bearing chromosomes in each cultivar, intraspecific sat-bearing chromosome number in several cultivars, the karyotype formula, and the effect of DAPI on sat-bearing chromosomes. The genomic diversity decoded and conserved in Indian rice for its adaptive potential is expected to be highly advantageous for global rice breeders and genome researchers in both conventional and new breeding initiatives.

2. Faculty Exchange Programme



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The following collaborative activities have been completed in accordance with the Memorandum of Understanding signed by Barasat Government College and Maulana Azad College on 13th June 2023.

Activity Type	Date/ Duration	Faculty details	Activity details: Syllabus/Paper code/ Topic Covered	Number of Participants
1. Faculty Exchange	15.06.2023	Ganapati Bhattacharya Head B Associate Professor Deptt. of Political Science Barasat Government College Barasat : Kol-700034	Administrative Processes : a. Decision Making	Sem-IV 09
			Nehru : Views on Socialism and Democracy	Sem-II 23
2. Faculty Exchange	27.06.2023	Dr. Onkar Nath Pathak Associate Professor Deptt. of Sanskrit Maulana Azad College Kolkata	Sanskrit Grammar and Translation- Karaka	Sem-IV 21
			Sanskrit Grammar and Translation- Pratyayas	Sem-II 19

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Attendance sheets of the class of Dr. Ganapati Bhattacharya at Maulana Azad College

Finals Exchange Programme
Barasat
Barasat Government College, Barasat, West Bengal, India
10th Semester (1st Half) (2021-22)

Department of the Faculty member: *Dr. Ganapati Bhattacharya*
Date: 18/04/2022
Name: *Dr. Ganapati Bhattacharya*
Address: *Kolkata, West Bengal*

S. No.	Name	Enrollment No.	Signature
1	<i>Abhishek Datta</i>	<i>2021010101</i>	<i>Abhishek Datta</i>
2	<i>Aditya Kumar</i>	<i>2021010102</i>	<i>Aditya Kumar</i>
3	<i>Arjun Das</i>	<i>2021010103</i>	<i>Arjun Das</i>
4	<i>Arshad Khan</i>	<i>2021010104</i>	<i>Arshad Khan</i>
5	<i>Arshad Khan</i>	<i>2021010105</i>	<i>Arshad Khan</i>
6	<i>Arshad Khan</i>	<i>2021010106</i>	<i>Arshad Khan</i>
7	<i>Arshad Khan</i>	<i>2021010107</i>	<i>Arshad Khan</i>
8	<i>Arshad Khan</i>	<i>2021010108</i>	<i>Arshad Khan</i>
9	<i>Arshad Khan</i>	<i>2021010109</i>	<i>Arshad Khan</i>
10	<i>Arshad Khan</i>	<i>2021010110</i>	<i>Arshad Khan</i>
11	<i>Arshad Khan</i>	<i>2021010111</i>	<i>Arshad Khan</i>
12	<i>Arshad Khan</i>	<i>2021010112</i>	<i>Arshad Khan</i>
13	<i>Arshad Khan</i>	<i>2021010113</i>	<i>Arshad Khan</i>
14	<i>Arshad Khan</i>	<i>2021010114</i>	<i>Arshad Khan</i>
15	<i>Arshad Khan</i>	<i>2021010115</i>	<i>Arshad Khan</i>
16	<i>Arshad Khan</i>	<i>2021010116</i>	<i>Arshad Khan</i>
17	<i>Arshad Khan</i>	<i>2021010117</i>	<i>Arshad Khan</i>
18	<i>Arshad Khan</i>	<i>2021010118</i>	<i>Arshad Khan</i>
19	<i>Arshad Khan</i>	<i>2021010119</i>	<i>Arshad Khan</i>
20	<i>Arshad Khan</i>	<i>2021010120</i>	<i>Arshad Khan</i>
21	<i>Arshad Khan</i>	<i>2021010121</i>	<i>Arshad Khan</i>
22	<i>Arshad Khan</i>	<i>2021010122</i>	<i>Arshad Khan</i>
23	<i>Arshad Khan</i>	<i>2021010123</i>	<i>Arshad Khan</i>

Signature of the Faculty member: *Dr. Ganapati Bhattacharya*

Finals Exchange Programme
Barasat
Barasat Government College, Barasat, West Bengal, India
10th Semester (1st Half) (2021-22)

Department of the Faculty member: *Dr. Ganapati Bhattacharya*
Date: 18/04/2022
Name: *Dr. Ganapati Bhattacharya*
Address: *Kolkata, West Bengal*

S. No.	Name	Enrollment No.	Signature
1	<i>Arshad Khan</i>	<i>2021010101</i>	<i>Arshad Khan</i>
2	<i>Arshad Khan</i>	<i>2021010102</i>	<i>Arshad Khan</i>
3	<i>Arshad Khan</i>	<i>2021010103</i>	<i>Arshad Khan</i>
4	<i>Arshad Khan</i>	<i>2021010104</i>	<i>Arshad Khan</i>
5	<i>Arshad Khan</i>	<i>2021010105</i>	<i>Arshad Khan</i>
6	<i>Arshad Khan</i>	<i>2021010106</i>	<i>Arshad Khan</i>
7	<i>Arshad Khan</i>	<i>2021010107</i>	<i>Arshad Khan</i>
8	<i>Arshad Khan</i>	<i>2021010108</i>	<i>Arshad Khan</i>
9	<i>Arshad Khan</i>	<i>2021010109</i>	<i>Arshad Khan</i>
10	<i>Arshad Khan</i>	<i>2021010110</i>	<i>Arshad Khan</i>
11	<i>Arshad Khan</i>	<i>2021010111</i>	<i>Arshad Khan</i>
12	<i>Arshad Khan</i>	<i>2021010112</i>	<i>Arshad Khan</i>
13	<i>Arshad Khan</i>	<i>2021010113</i>	<i>Arshad Khan</i>
14	<i>Arshad Khan</i>	<i>2021010114</i>	<i>Arshad Khan</i>
15	<i>Arshad Khan</i>	<i>2021010115</i>	<i>Arshad Khan</i>
16	<i>Arshad Khan</i>	<i>2021010116</i>	<i>Arshad Khan</i>
17	<i>Arshad Khan</i>	<i>2021010117</i>	<i>Arshad Khan</i>
18	<i>Arshad Khan</i>	<i>2021010118</i>	<i>Arshad Khan</i>
19	<i>Arshad Khan</i>	<i>2021010119</i>	<i>Arshad Khan</i>
20	<i>Arshad Khan</i>	<i>2021010120</i>	<i>Arshad Khan</i>
21	<i>Arshad Khan</i>	<i>2021010121</i>	<i>Arshad Khan</i>
22	<i>Arshad Khan</i>	<i>2021010122</i>	<i>Arshad Khan</i>
23	<i>Arshad Khan</i>	<i>2021010123</i>	<i>Arshad Khan</i>

Signature of the Faculty member: *Dr. Ganapati Bhattacharya*

Representative photographs of the class of Dr. Ganapati Bhattacharya at Maulana Azad College



G. Bhattacharya
Principal
Barasat Government College
Principal
Barasat Government College

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Website: <https://maulanaazadcollegekolkata.ac.in>

Attendance sheets of the class of Dr. Onkar Nath Pathak at Barasat Govt. College

Sl. No.	Name	Roll No.	Grade
1	ABHIRAM CHAKRABORTY	201901001	B.A. Honors
2	ADARSH CHAKRABORTY	201901002	B.A. Honors
3	ADITHYAN CHAKRABORTY	201901003	B.A. Honors
4	ADITHYAN CHAKRABORTY	201901004	B.A. Honors
5	ADITHYAN CHAKRABORTY	201901005	B.A. Honors
6	ADITHYAN CHAKRABORTY	201901006	B.A. Honors
7	ADITHYAN CHAKRABORTY	201901007	B.A. Honors
8	ADITHYAN CHAKRABORTY	201901008	B.A. Honors
9	ADITHYAN CHAKRABORTY	201901009	B.A. Honors
10	ADITHYAN CHAKRABORTY	201901010	B.A. Honors
11	ADITHYAN CHAKRABORTY	201901011	B.A. Honors
12	ADITHYAN CHAKRABORTY	201901012	B.A. Honors
13	ADITHYAN CHAKRABORTY	201901013	B.A. Honors
14	ADITHYAN CHAKRABORTY	201901014	B.A. Honors
15	ADITHYAN CHAKRABORTY	201901015	B.A. Honors
16	ADITHYAN CHAKRABORTY	201901016	B.A. Honors
17	ADITHYAN CHAKRABORTY	201901017	B.A. Honors
18	ADITHYAN CHAKRABORTY	201901018	B.A. Honors
19	ADITHYAN CHAKRABORTY	201901019	B.A. Honors
20	ADITHYAN CHAKRABORTY	201901020	B.A. Honors
21	ADITHYAN CHAKRABORTY	201901021	B.A. Honors
22	ADITHYAN CHAKRABORTY	201901022	B.A. Honors
23	ADITHYAN CHAKRABORTY	201901023	B.A. Honors
24	ADITHYAN CHAKRABORTY	201901024	B.A. Honors
25	ADITHYAN CHAKRABORTY	201901025	B.A. Honors
26	ADITHYAN CHAKRABORTY	201901026	B.A. Honors
27	ADITHYAN CHAKRABORTY	201901027	B.A. Honors
28	ADITHYAN CHAKRABORTY	201901028	B.A. Honors
29	ADITHYAN CHAKRABORTY	201901029	B.A. Honors
30	ADITHYAN CHAKRABORTY	201901030	B.A. Honors

Sl. No.	Name	Roll No.	Grade
1	ADITHYAN CHAKRABORTY	201901031	B.A. Honors
2	ADITHYAN CHAKRABORTY	201901032	B.A. Honors
3	ADITHYAN CHAKRABORTY	201901033	B.A. Honors
4	ADITHYAN CHAKRABORTY	201901034	B.A. Honors
5	ADITHYAN CHAKRABORTY	201901035	B.A. Honors
6	ADITHYAN CHAKRABORTY	201901036	B.A. Honors
7	ADITHYAN CHAKRABORTY	201901037	B.A. Honors
8	ADITHYAN CHAKRABORTY	201901038	B.A. Honors
9	ADITHYAN CHAKRABORTY	201901039	B.A. Honors
10	ADITHYAN CHAKRABORTY	201901040	B.A. Honors
11	ADITHYAN CHAKRABORTY	201901041	B.A. Honors
12	ADITHYAN CHAKRABORTY	201901042	B.A. Honors
13	ADITHYAN CHAKRABORTY	201901043	B.A. Honors
14	ADITHYAN CHAKRABORTY	201901044	B.A. Honors
15	ADITHYAN CHAKRABORTY	201901045	B.A. Honors
16	ADITHYAN CHAKRABORTY	201901046	B.A. Honors
17	ADITHYAN CHAKRABORTY	201901047	B.A. Honors
18	ADITHYAN CHAKRABORTY	201901048	B.A. Honors
19	ADITHYAN CHAKRABORTY	201901049	B.A. Honors
20	ADITHYAN CHAKRABORTY	201901050	B.A. Honors
21	ADITHYAN CHAKRABORTY	201901051	B.A. Honors
22	ADITHYAN CHAKRABORTY	201901052	B.A. Honors
23	ADITHYAN CHAKRABORTY	201901053	B.A. Honors
24	ADITHYAN CHAKRABORTY	201901054	B.A. Honors
25	ADITHYAN CHAKRABORTY	201901055	B.A. Honors
26	ADITHYAN CHAKRABORTY	201901056	B.A. Honors
27	ADITHYAN CHAKRABORTY	201901057	B.A. Honors
28	ADITHYAN CHAKRABORTY	201901058	B.A. Honors
29	ADITHYAN CHAKRABORTY	201901059	B.A. Honors
30	ADITHYAN CHAKRABORTY	201901060	B.A. Honors

Representative photographs of the class of Dr. Onkar Nath Pathak at Barasat Govt. College



Chatterjee
Principal
Barasat Government College
Principal
Barasat Government College

Principal
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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**Activities under MoU between Maulana Azad College, Kolkata 700013 and
Calcutta Girls' College, Kolkata 700013**

Start date of MoU: 15.06.2023

End date of MoU: Continuing

Duration: 5 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Resource persons in Workshop under Faculty Exchange Programme</u> A Workshop for UG Sem II and Sem IV students of Mathematics on "Ordinary & Partial Differential Equation" where one of the two invited resource persons was Dr. Debasish Biswas, Assistant Professor, Dept. of Mathematics, Calcutta Girls' College	24.06.23	28.06.2023	Maulana Azad College	53 students of Maulana Azad College
2.	<u>Faculty Exchange Programme</u> Dr. Debasri Basu, Assistant Professor, Dept. of English, Maulana Azad College delivered an interactive talk on Mansfield's "Bliss" in the Extension Lecture Programme organized by the Department of English in association with IQAC, Calcutta Girls' College on 08.12.23	08.12.23	08.12.23	Calcutta Girls' College	24 students and 8 faculty members
3.	<u>Faculty exchange Programme</u> Dr. Suparna Bhattacharya, Associate Professor, Dept. of English, Calcutta Girls' College delivered a lecture on William Shakespeare's "The Winter's Tale" for the M.A. English 1st Semester students of Maulana Azad College	22.05.24	22.05.24	Maulana Azad College	4 students of Maulana Azad College


Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

Principal

Calcutta Girls' College


Principal
Maulana Azad College
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Govt. of West Bengal

Principal

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Report on the activities under MOU for Academic Collaboration between Maulana Azad College Kolkata and Calcutta Girls' College.

➤ **Date of Signing the MOU:** 15.06.2023

➤ **Objective:**

Initiate an academic Collaboration between departments of Maulana Azad College and Calcutta Girls' College which would benefit the students and faculty members of both the institutions in their pursuit of academic excellence.

➤ **Target Participants:** Students and faculty members of both Institutions.

➤ **Venue:** Maulana Azad College and Calcutta Girls' College.

➤ **Expected Outcome:**

Students and faculty members of both Institutions will be benefited in terms of their academic pursuit in several areas by organizing joint Seminar/Workshop/Conference, Student exchange programme, Faculty exchange programme etc.

➤ **Report of activity carried out under MoU**

1. Name of the activity: A Workshop on “**Ordinary & Partial Differential Equation**”.

Date: 24.06.2023 to 28.06.2023

Venue: Dept. of Mathematics, Maulana Azad College

Resource Persons:

1. Dr. Bimal Kumar Sett, Assistant Professor, Dept. of Mathematics, Kanyashree College
2. Dr. Debasish Biswas, Assistant Professor, Dept. of Mathematics, Calcutta Girls' College

Number of participants: 53

Brief Report of the Activity: The Department of Mathematics had organized a Workshop on “**Ordinary & Partial Differential Equation**” from 24.06.2023 to 28.06.2023 for the students of Mathematics Honours. All the 53 students of Semester-2 & Semester-4 actively participated in this Workshop. The participants were enriched by learning the techniques for solving the ODE & PDE using computer programming. In the feedback session the students requested for arranging at least two such workshops in an academic year.

S. Pradip
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

[Signature]
Principal
Maulana Azad College
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Maulana Azad College
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Maulana Azad College

Department of Mathematics

Workshop on “**Ordinary & Partial Differential Equation**”.

Date: **24th June, 2023**

Tentative programme schedule:

11:00 A.M. to 11.20 A.M.	Enrollment of Participants.
11:20 A.M. to 11:25 A.M.	Inaugural lecture by Principal, Maulana Azad College
11:25 A.M. to 11:30 A.M.	Speech by IQAC Coordinator, Maulana Azad College
11:30 A.M. to 1:00 P.M.	Lecture-1 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
1:00 P.M. to 1:15 P.M.	Break
1:15 P.M. to 2:45 P.M.	Lecture-1 on Partial Differential Equation by Dr. Debashis Biswas.
2:45 P.M. to 4:45 P.M.	Problem Solving on both topics

Date: **26th June, 2023**

11:00 A.M. to 1:00 P.M.	Lecture-2 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
1:00 P.M. to 1:15 P.M.	Break
1:15 P.M. to 3:00 P.M.	Lecture-2 on Partial Differential Equation by Dr. Debashis Biswas.
3:00 P.M. to 4:30 P.M.	Problem Solving on both topics.

Date: **27th June, 2023**

11:00 A.M. to 1:00 P.M.	Lecture-3 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
1:00 P.M. to 1:15 P.M.	Break
1:15 P.M. to 3:00 P.M.	Lecture-3 on Partial Differential Equation by Dr. Debashis Biswas.
3:00 P.M. to 4:30 P.M.	Solution of ODE and PDE using computer programming.

Date: **28th June, 2023**

11:00 A.M. to 12:00 P.M.	Lecture-4 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
12:00 P.M. to 1:00 P.M.	Lecture-4 on Partial Differential Equation by Dr. Debashis Biswas.
1:00 P.M. to 1:30 P.M.	Break
1:30 P.M. to 2:30 P.M.	MCQ Test on both topics.
2.30 P.M to 3.00 P.M	Feedback from participants.
3.00 P.M to 3.30 P.M	Valedictory Session and Certificate distribution.

S. Pradyumn
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOI KATA

[Signature]
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Department of Mathematics
Attendance for the Workshop on "Ordinary Partial Differential Equation".

27	ANIRBAN KARAN	Anirban Karan
28	ARHANA DAS	Arhana Das
29	ARNAB CHHARI	Arnab Chhari
30	MASTURA PARVIN	Mastura Parvin
31	MASUDUZZAMAN GAZI	Masuduzzaman - Gazi
32	MASUM YEHANA	Masum Yehana
33	NILAVO ROY	Nilavo Roy
34	NIRMALYA NASKAR	Absent
35	PROMIT BHATTACHARYA	Promit Bhattacharya
36	PUSKAR DAS	Puskar Das
37	RAKHI HAZRA	Rakhi Hazra
38	RANJAN PATRA	Ranjan Patra
39	SAGNIK BEJ	Sagnik Bej
40	SAMUDRA MITRA	Samudra Mitra
41	SAYAN DUTTA	Sayan Dutta
42	SENEPTA YEASMIN GOLDER	Seneptha Yeasmin Golder
43	SHINJAN MUKHERJEE	Shinjan Mukherjee
44	SHRESTHA SATPATHI	Shrestha Satpathi
45	SHREYA BASAK	Shreya Basak
46	SHUBHAJIT GHOSH	Shubhajit Ghosh
47	SK SAID HOSEN	Absent
48	SK SAIDUL ISLAM	Absent
49	SOHEL SK	Sohel SK
50	SOUMYADIP GHOSH	Soumyadip Ghosh
51	SUBHANJAN MAHATA	Subhanjan Mahata
52	SUJAY BANERJEE	Sujay Banerjee
53	SUMIT MANDAL	Sumit Mandal
54	SUNEETH DEBNATH	Suneeth Debnath
55	SUPRATIM MANDAL	Supratim Mandal
56	SUSHOVAN JANA	Sushovan Jana

Supadhyam
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
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Photographs of Dr. Debasish Biswas delivering lecture



S. Upadhyay
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

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Consent letter from Principal, Calcutta Girls' College

PHONE : 2265-3414 (Principal)
: 2226-2540 (Office)

Calcutta Girls' College
3, GOALTULI LANE, KOLKATA - 700 013
E-mail : collegecalcuttagirls@gmail.com / admin@calcuttagirlscollege.ac.in
Website : www.calcuttagirlscollege.ac.in
NAAC ACCREDITED (CYCLE : 3) GRADE : B+
QMS (ISO 9001 : 2015) & EMS (ISO 14001 : 2015) CERTIFIED

Principal / Secretary

Ref. No. _____ Date 22/06/2023

To
The Principal
Maulana Azad College
8, Rafi Ahmed Kidwai Road
Kolkata-700013

From
The Principal
Calcutta Girls' College
3, Goal Tuli Lane
Kolkata-700013

Sub: Permission to Dr. Debashis Biswas for conducting classes at your institution under Faculty Exchange Programme as per MOU

Sir,

I heartily thank you for establishing Faculty Exchange Programme between our neighbouring institutions as entitled in the MOU signed on 15.6.2023. I am extremely happy at this initiative towards institutional sharing of academic and intellectual resources.

Dr. Debashis Biswas, Assistant Professor in Mathematics, Calcutta Girls' College is given due permission to conduct classes in the Honours course for a maximum number of two days per week until further notification.

I hope our students would be enriched through this initiative.

Thank you,
With best wishes

S. Upadhyaya
Dr. Satya Upadhyaya
Principal & Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA
Copy forwarded to
1. IQAC, Calcutta Girls' College.



S. Upadhyaya
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

S. Upadhyaya
Principal
Maulana Azad College
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Appreciation certificate given to Dr. Biswas from Maulana Azad College



S. Pradyumn
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

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2. Faculty Exchange Programme

Dr. Debasri Basu, Assistant Professor, Dept. of English, Maulana Azad College delivered an interactive talk on Mansfield's "Bliss" in the Extension Lecture Programme organized by the Department of English, Calcutta Girls' College in association with IQAC on 08.12.23

Number of participants: Faculty members- 8, Students -24

Copy of Invitation letter to Dr. Debasri Basu, Assistant Professor, Dept. of English, Maulana Azad College and representative photographs of the event



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Principal / Secretary
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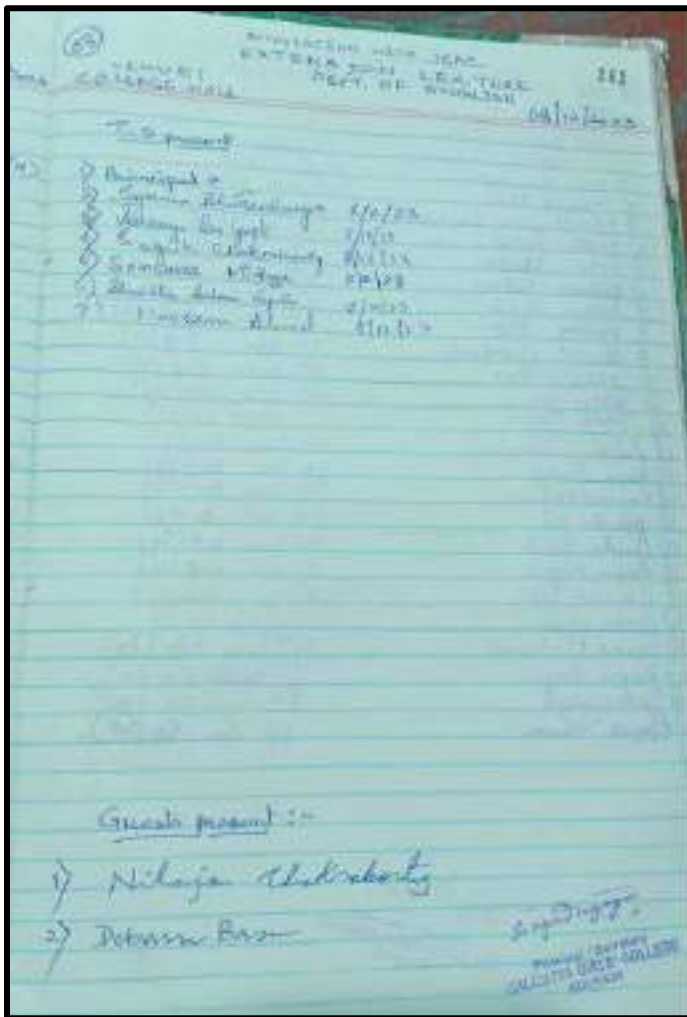
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Copy of faculty and student attendance of Dr. Debasri Basu's lecture



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Maulana Azad College
8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com

Website: <https://maulanaazadcollegekolkata.ac.in>

3. Faculty Exchange Programme

Dr. Suparna Bhattacharya, Associate Professor, Dept. of English, Calcutta Girls' College delivered a lecture on William Shakespeare's "The Winter's Tale"

Target Audience: M.A. English 1st Semester students of Maulana Azad College
Number of students who attended the online class: 4

Date: 22.05.2024

Copy of invitation letter to Dr. Suparna Bhattacharya and
screenshot of record of class attendance



* Meet		
* Meeting code: nka-4ze-uqg		
* Created on 2024-05-22 21:02:31		
* Ended on 2024-05-22 22:22:41		
Full Name	First Seen	Time in Call
Dipak Rajak	22-05-2024 11:05	1:15:44
Wehnaz Firdaus	22-05-2024 11:08	1:06:46
Monisha Das	22-05-2024 11:09	1:13:37
Rimshin Dutta	22-05-2024 11:19	1:03:05
Suparna Bhattacharya	22-05-2024 11:02	1:30:08

Suparna
Principal / Secretary
CALCUTTA GIRLS' COLLEGE
KOLKATA

Suparna
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



GOVERNMENT OF WEST BENGAL
OFFICE OF THE PRINCIPAL



Maulana Azad College

8, RAFI AHMED KIDWAI ROAD, KOLKATA 700013, INDIA
Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com
Website: https://maulanaazadcollegekolkata.ac.in

Copy of DELNET Membership renewal letter and certificate in 2023




Dr. Sangeeta Kaul
Director

DELNET
Developing Library Network
11011, Connaught, Midtown Mansarovar Road
Connaught Place, New Delhi-110029, India
Tel: 91-11-26742322, 26741166
91-98 00339991 (Mobile)
E-mail: sangeet@delnet.in, VC@delnet.in
sangeetad@delnet.in@yahoo.co.in
Web: www.delnet.in
August 23, 2022

Subject: DELNET Membership Renewal

Dear Mr. Kaul:

The acknowledgment with thanks for the receipt of INR 170 of Thirteen Thousand Five Hundred Seventy only received through NEFT dated 08.08.2022, marks receipt of the DELNET Annual Institutional Membership Fee for the period 2022-2023. The receipt no. 7088 dated 23.8.2022 is enclosed for the office records.

You are requested to access DELNET database through the World Wide Web using the following procedure:

Web Address: www.delnet.in

Click onto "New Discovery Portal". Note the IP address provided to you in our e-mail (enclosed), you are requested to use following steps & password to access the new discovery portal of DELNET:

Login: **delnet**
Password: **delnet14**

Kindly note your User Library name (ALL the libraries registered in "delnet4delnet") to be used while registering a request. You may also continue to use the old registration information as registered in our database as well as, request and/or information to be the responsibility of you. We will be not held to issue this request. After a computer screen comes up to access DELNET online database is available at the Discovery Portal. We would further like to advise you that large paper can be generated through "USAGE OF A PAPER" but which option is the way side of the reading page of the Discovery portal. I refer you the password as "DELNET" to download the pdf containing usage report of your institution.

I would like to mention that DELNET provides access to books, articles, journals, newspapers, e-books, e-journals, e-articles, etc. through Discovery Portal and also provides the facility to search and find all these books, e-journals & articles through Knowledge Center Portal. DELNET also provides English software free of charge for those educational purposes. DELNET Online Access Facility of New Journals which are available by member libraries are provided free.

I would also like to advise you that DELNET shall be glad to organize a one day online or offline National Knowledge Conference or a research conference. Also, we will use the students, faculty, researchers and scholars of Maulana Azad College, Kolkata, West Bengal. It will help in the effective utilization of DELNET resources and services.

For receiving a 2022-2023 DELNET and a Certificate of Membership. Please kindly be so kind if you wish to get any books in E-L or the journal articles.



With kind regards,



Sangeeta Kaul

Air Muzam Dandi
Librarian (IC)
Maulana Azad College
8, Rafi Ahmed Kidwai Road
Kolkata-700013
West Bengal

Encl: (1) Receipt no. 7088 dated 23.8.2022 of DELNET
(2) Fee Invoice
(3) DELNET Portal
(4) Certificate of Membership

DELNET
Developing Library Network
New Delhi
www.delnet.in

Certificate of Membership

This certifies that



**Maulana Azad College
Kolkata**

is an Institutional Member of

DELNET – Developing Library Network

and is entitled to all benefits and privileges pertaining thereto.

Membership Number **IM – 1321** has been renewed and next renewal is due on August 28, 2023

Dr. Sangeeta Kaul
Director
DELNET, New Delhi

Date of Issue: August 23, 2022



Dr. Sangeeta Kaul
Director
DELNET, New Delhi



Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

8. Particulars of the Library Head

Name : BISWAJIT BANERJEE
 Designation : LIBRARIAN (S.G)
 Phone : (033) 2217-8185
 Fax : - Email bisbanmae@yahoo.co.in

9. Library Collection

(a) No. of books including bound periodicals 92,936
 (b) No. of periodicals received 12
 (c) Other reading material Newspaper & Bulletin
 (d) Total annual budget 3,50,000/-

10. Library Staff

(a) No. of professional staff with
 (i) Degree in Library Science 2+3
 (ii) Diploma/Degree in Computer Applications 2

11. No. of Library users 2,000/-

12. Computer Hardware Available in the Library 7 P.C, 2-Printer, 1-Scanner, LAN, Internet

13. Name of the Library Software Being Used ULIB

14. Additional Products/Services of DELNET in which we would be interested:

(a) DELPLUS Library Management Software	Yes/No
(b) Proceeding of the National Convention on Library and Information Networking (NACLIN)	Yes/No
(c) Publications	Yes/No
(d) Training Programmes for staff	Yes/No
(e) Knowledge Centre Activities	Yes/No
(f) Consortia for Subscription to periodicals	Yes/No
(g) Consultancy from DELNET for Modernisation of our Library	Yes/No

FOR OFFICE USE ONLY

Admitted on : 18/08/2008 Receipt No.: 12289
 Receipt Date : 08/08/2008 Membership No.: IM-1321

1. Rule 4(c)

Institutional Members: An Institution, Department, Association, Society, University or College that has a library with a collection of more than 10,000 volumes is eligible to become an Institutional Member of the Society on payment of Admission fee, Annual Subscription and any other charge as prescribed by the Governing Board. Now all Institutions/ Libraries are admitted as Institutional Members irrespective of the number of books in their libraries.

2. Details of current rates of Admission Fee, Annual Subscription and ILL Fee are given in the enclosed sheet/brochure.


 Dr. Sangeeta Kaul
 Director
 DELNET, New Delhi


 Principal
 Maulana Azad College
 Principal
 Maulana Azad College
 Kolkata
 Govt. of West Bengal



GOVERNMENT OF WEST BENGAL
OFFICE OF THE PRINCIPAL
Maulana Azad College
 8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com

Website: <https://maulanaazadcollegekolkata.ac.in>

Activities under MoU between Maulana Azad College, Kolkata 700013 and Government Girls' General Degree College, Ekbalpore, Kolkata 700023

Start date of MoU: 14.06.23

End date of MoU: Continuing

Duration: 5 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Faculty Exchange Programme</u> Dr. Debaprasad Banerjee, Associate Professor and Head, Dept. of English, Government Girls' General Degree College, Ekbalpore, Kolkata took classes of M.A. Sem IV students of Maulana Azad College	19.06.23	19.06.23	Maulana Azad College, Kolkata	18
2.	<u>Faculty Exchange Programme</u> Dr. Ajanta Mukherji, Assistant Professor, Dept. of Chemistry, Maulana Azad College, took classes of B.Sc. Chemistry (Hons.) Sem II, IV and VI students of Government Girls' General Degree College, Ekbalpore, Kolkata	17.06.23 19.06.23 21.06.23 22.06.23 23.06.23	17.06.23 19.06.23 21.06.23 22.06.23 23.06.23	Government Girls' General Degree College, Ekbalpore	4 (Sem VI) 3 (Sem VI) 3 (Sem VI) 3 (Sem IV) 2 (Sem II)

Activities between Maulana Azad College and Government Girls' General Degree College, Ekbalpore prior to MoU under linkage

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	Dr. Ajanta Mukherji, Assistant Professor, Dept. of Chemistry, Maulana Azad College gave a lecture as an invited resource person in the One-day seminar titled "Way to a Greener World" organized by Government Girls' General Degree College, Ekbalpore, Kolkata.	20.09.2019	20.09.2019	Government Girls' General Degree College, Ekbalpore, Kolkata.	6 from Maulana Azad College
2.	Dr. Rajendra Saha, Associate Professor, Dept. of Chemistry, Maulana Azad College and Dr. Subhodeep Samanta, Assistant Professor, Dept. of Chemistry, Maulana Azad College, took classes of B.Sc. Chemistry Sem IV classes	13.03.23 20.03.23 21.03.23 22.03.23 27.03.23 28.03.23 04.04.23 10.04.23 11.04.23 17.04.23	13.03.23 20.03.23 21.03.23 22.03.23 27.03.23 28.03.23 04.04.23 10.04.23 11.04.23 17.04.23	Maulana Azad College, Kolkata.	3 (Sem IV) Do Do Do Do Do Do Do Do Do


Principal
Government Girls' General Degree College
Kolkata


Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



GOVERNMENT OF WEST BENGAL
OFFICE OF THE PRINCIPAL
Maulana Azad College
8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com
Website: <https://maulanaazadcollegekolkata.ac.in>

Report on activities under MOU: Academic linkage for Faculty exchange Programme between Maulana Azad College, Kolkata-13 and Government Girls' General Degree College Ekbalpore, Kolkata-23

Date of Signing of MoU: 14:06.2023

- **OBJECTIVE/ PURPOSE:**
Initiate an academic Collaboration between the two colleges which would benefit the students and faculty members of both the institutions in their pursuit of academic excellence.
- **TARGET AUDIENCE/ PARTICIPANTS:** Students and faculty members of both Institutions
- **VENUE:** Maulana Azad College and Government Girls' General Degree College, Ekbalpur.
- **EXPECTED OUTCOME:**
Students and faculty members of both Institutions will be benefited in terms of their academic pursuit in areas of faculty exchange programmes, Joint conference organization, Joint research activities etc.

Yearwise report of activities under MoU and also before MoU (as linkage between two Institutions)

1. Faculty Exchange Programme

Date	Department and College	Semester	Course Code	Topics	Teachers Involved	Affiliating College	Number of students
10.04.2023 and 19.06.2023	PG Dept. of English, Maulana Azad College	M.A. Sem II and Sem IV	English	Samuel Beckett's Endgame (Sem IV) Graham Greene's Brighton Rock (Sem II)	Dr. Debaprasad Banerjee, Associate Professor and Head	Dept. of English, Government Girls' General Degree College	20 (Sem II) (10.04.23) 18 (Sem IV) (19.06.23)
17.06.2023, 19.06.2023, 21.06.2023, 22.06.2023, 23.06.2023	Dept. of Chemistry, Government Girls' General Degree College, Ekbalpore	B.Sc. Sem II, Sem IV and Sem VI	CC-3P (Sem-II) CC-8P (Sem-4) DSE-A3P (Sem-VI)	Organic Chemistry	Dr. Ajanta Mukherji, Assistant Professor	Dept. of Chemistry, Maulana Azad College	4 (Sem VI) (17.06.23) 3 (Sem VI) (19.06.2023) 3 (Sem VI) (21.06.2023) 3 (Sem IV) (22.06.2023) 2 (Sem II) (23.06.2023)


Principal
Government Girls' General Degree College
Kolkata


Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Website: <https://maulanaazadcollegekolkata.ac.in>

Invitation letter to Dr. Debaprasad Banerjee for taking classes

POST GRADUTATE DEPARTMENT OF ENGLISH
MAULANA AZAD COLLEGE
8, Rafi Ahmed Kidwai Road, Kolkata 13, India
www.maulanaazadcollegekolkata.ac.in Email: english@maulanaazadcollegekolkata.ac.in

Dated: 11/04/2023

To
Dr. Debaprasad Banerjee
Government Girls' General Degree College, Ekbalpara,
Kolkata 23

Sir,
We have the pleasure of inviting you for delivering a lecture on Samuel Beckett's
Endgame to our M.A. 4th Semester students on 12th April 2023 at 11.30 p.m. Looking forward
to seeing you in our department.
Best regards,

[Signature]
HOD
Dept. Of English
Head
P. G. Department of English
Maulana Azad College
Kolkata 13

[Signature]
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

[Signature]
Permitted
Principal
Government Girls' General
Degree College
Kolkata

POST GRADUTATE DEPARTMENT OF ENGLISH
MAULANA AZAD COLLEGE
8, Rafi Ahmed Kidwai Road, Kolkata 13, India
www.maulanaazadcollegekolkata.ac.in Email: english@maulanaazadcollegekolkata.ac.in

Dated: 6/04/2023

To
Dr. Debaprasad Banerjee
Government Girls' General Degree College, Ekbalpara,
Kolkata 23

Sir,
We have the pleasure of inviting you for delivering a lecture on Graham Greene's
Brighton Rock to our M.A. 2nd Semester students on 10th April 2023 at 1.00 p.m. Looking
forward to seeing you in our department.
Best regards,

[Signature]
HOD
Dept. Of English
Head
P. G. Department of English
Maulana Azad College
Kolkata 13

[Signature]
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

[Signature]
Permitted
Principal
Government Girls' General
Degree College
Kolkata

Photographs of Dr. Debaprasad Banerjee taking class at Maulana Azad College



[Signature]
Principal
Government Girls' General
Degree College
Kolkata

[Signature]
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



GOVERNMENT OF WEST BENGAL
OFFICE OF THE PRINCIPAL
Maulana Azad College
8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



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Website: <https://maulanaazadcollegekolkata.ac.in>

Attendance of students in Dr. Banerjee's class

POST GRADUATE DEPARTMENT OF ENGLISH
MAULANA AZAD COLLEGE
Date: 10/04/2023

Attendance of M.A. 2nd Semester

Students Present:

1. Abhinav Banerjee
2. Anarima Mukherjee
3. Muskan Afroz
4. Baissakhi Mukherjee
5. Debyani Chakraborty
6. Dwaipayan Hira
7. Priyanka Saha
8. Poulami Debosth
9. Rupam Ghosh
10. Refaz Karim
11. Susmita Das
12. Anirban Deb
13. Ankita Chakraborty
14. Somdatta Dhar
15. Debalina Mandal
16. Aarav Wu
17. Gulshris Saha
18. Moumita Das
19. Soyeta Singh
20. Tanvina Parvin

Signature of the teacher: *Debnarayan Banerjee*

Signature of HOD (English): *PE*

Head
P.G. Department of English
Maulana Azad College
Taltala, Kolkata

Signature of Principal, Maulana Azad College:
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

POST GRADUATE DEPARTMENT OF ENGLISH
MAULANA AZAD COLLEGE
Date: 19/06/2023

Attendance of M.A. 4th Semester

Students Present:

1. Ananya Das
2. Arjit Das
3. Halima Khatun
4. Md. Imran Akhmed Mallick
5. Ishita Saha
6. Rubell Chakraborty
7. Namrata Basak
8. Nishat Munir
9. Rajaraj Banerjee
10. Saba Parveen
11. Sana Haat
12. Saptarshi Mondal
13. Shahnawas Karim
14. Shromona Ganguly
15. Smritikanta Maity
16. Soumyajit Guha
17. Sujan Das
18. Shubhrajot Kamila

Signature of the teacher: *Debnarayan Banerjee*

Signature of HOD (English): *PE*

Head
P.G. Department of English
Maulana Azad College
Taltala, Kolkata

Signature of Principal, Maulana Azad College:
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

Debnarayan Banerjee
Principal
Government Girls' General
Degree College
Kolkata

Debnarayan Banerjee
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Website: <https://maulanaazadcollegekolkata.ac.in>

Photographs of Dr. Ajanta Mukherji taking classes at Government Girls' General Degree College



Attendance of students in Dr. Mukherji's class

GOVERNMENT GIRLS' GENERAL DEGREE COLLEGE
7, MAYURBIHARI ROAD, KOLKATA - 700013
DEPARTMENT OF CHEMISTRY

Special Practical Class Date: 17.06.2023

Attendance of Chemistry (Hons.) Students

Students present	Signature
1. Vidhata Saha	A
2. Umapa Umapa Verma	A
3. Vidhata Agrawal	A
4. Umapa Umapa Verma	A

Signature of Head, Department of Chemistry
Signature of Principal
17/06/23

GOVERNMENT GIRLS' GENERAL DEGREE COLLEGE
7, MAYURBIHARI ROAD, KOLKATA - 700013
DEPARTMENT OF CHEMISTRY

Special Practical Class Date: 19.06.2023

Attendance of Chemistry (Hons.) Students

Students present	Signature
1. Vidhata Agrawal	A
2. Vidhata Saha	A
3. Umapa Umapa Verma	A

Signature of Head, Department of Chemistry
Signature of Principal
19/06/23

Ajanta Mukherji
Principal
Government Girls' General
Degree College
Kolkata

Ajanta Mukherji
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Maulana Azad College

8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com

Website: <https://maulanaazadcollegekolkata.ac.in>

Attendance of students in Dr. Mukherji's class

GOVERNMENT GIRL'S GENERAL DEGREE COLLEGE
7, MAYURBHANJ ROAD, KOLKATA - 700023
DEPARTMENT OF CHEMISTRY

Special Practical Class Date: 21.06.2023

Attendance of Chemistry (Bons.) Students

Students present:	Semester
1. Gulshan Fatima	4
2. Afkhan Parveen	4
3. Aashadi Parveen	4

Signature of the teacher: 21/06/23
Signature of Head Department of Chemistry: 21.06.2023
Signature of Principal: 21/06/23
Principal Government Girls' Degree College Kolkata

GOVERNMENT GIRL'S GENERAL DEGREE COLLEGE
7, MAYURBHANJ ROAD, KOLKATA - 700023
DEPARTMENT OF CHEMISTRY

Special Practical Class Date: 22.06.2023

Attendance of Chemistry (Bons.) Students

Students present:	Semester
1. Gulshan Fatima	4
2. Afkhan Parveen	4
3. Aashadi Parveen	4

Signature of the teacher: 22/06/23
Signature of Head Department of Chemistry: 22.06.2023
Signature of Principal: 22/06/23
Principal Government Girls' Degree College Kolkata

GOVERNMENT GIRL'S GENERAL DEGREE COLLEGE
7, MAYURBHANJ ROAD, KOLKATA - 700023
DEPARTMENT OF CHEMISTRY

Special Practical Class Date: 23.06.2023

Attendance of Chemistry (Bons.) Students

Students present:	Semester
1. Vanshika Gupta	2
2. Jannatul Ferdous	2

Signature of the teacher: 23/06/23
Signature of Head Department of Chemistry: 23.06.2023
Signature of Principal: 23/06/23
Principal Government Girls' Degree College Kolkata

Principal
Government Girls' General
Degree College
Kolkata

Principal
Maulana Azad College
Kolkata
Govt. of West Bengal





GOVERNMENT OF WEST BENGAL
OFFICE OF THE PRINCIPAL
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Website: <https://maulanaazadcollegekolkata.ac.in>

Certification from Principal, Government Girls' General Degree College, Ekbalpore to Ajanta Mukherji



**GOVERNMENT GIRLS' GENERAL DEGREE COLLEGE**
7, Hayabhanj Road, Kolkata - 700023
Telephone No. : 033-2448-1148, 033-2448-1171
E-mail: gggc.wd@gmail.com
Website: www.gorgirlsekbalpur.com

Ref. No. : _____ Date : _____

CERTIFICATE OF APPRECIATION

It is my immense pleasure to certify that Dr. Ajanta Mukherji, Assistant Professor of the Department of Chemistry, Maulana Azad College, Kolkata has involved herself with various activities of our College, with special reference to the Department of Chemistry. She has delivered a Lecture on Environment addressing all students of our college in a Seminar ("Way to a Greener World") held on 20.09.2019, taken special practical sessions and acted as an External Evaluator of B.Sc. (Hons.) in Chemistry practical of Semester-II, Semester-IV and Semester-VI between 17.06.2023 and 23.06.2023, respectively, in per Memorandum of Understanding between both Colleges.

I highly appreciate her valuable contribution to the continued collaborative effort between our Colleges.


Principal 24/06/23
Government Girls' General Degree College,
Kolkata
Government Girls' General
Degree College
Kolkata


Principal
Government Girls' General
Degree College
Kolkata


Principal
Maulana Azad College
Kolkata
Govt. of West Bengal




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Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com
Website: <https://maulanaazadcollegekolkata.ac.in>

List of activities with Government Girls' General Degree College, Ekbalpore before MoU as linkage

Copy of the Linkage Certificate between two colleges



GOVERNMENT GIRLS' GENERAL DEGREE COLLEGE
7, Mayurbhanj Road, Kolkata - 700 023
Telephone No. : 033-2448-1160, 033-2448-1171
E-mail : gggdc.colf@gmail.com
Website : www.govtgirlsekalpur.com

Ref. No. : Date :

LINKAGE/COLLABORATION

This Linkage is hereby solemnised between GOVERNMENT GIRLS' GENERAL DEGREE COLLEGE 7, MAYUR BHANJ ROAD, KOLKATA-700023 between MAULANA AZAD COLLEGE, KOLKATA, RAJFI AHMED KIDWAI ROAD KOLKATA-700013 for fostering collaborative academic growth and development, for a period of FIVE YEARS w.e.f. 30.06.2018

The activities of this linkage are listed below

1. Teacher /Student Exchange Programme
2. Joint hosting of seminars.
3. Collaborative Research work

This linkage will respect Intellectual Property Rights and any intellectual matter developed by the collaborative efforts of two colleges shall be retained by them. Both the parties shall respect and retain confidentially in each / any of the collaborative efforts, and all collaborative academic exercises shall be guided/directed and impelled by the greater academic interest of both the parties, and not any other /commercial interest. No legal relationship between the two parties is implied through this linkage, and any of the two parties can choose to terminate the linkage with a prior written notice of three months.

This Linkage shall uphold the ethos of holistic and integrated academic excellence and growth followed by all higher education institutions of the country and shall not in any way impede or affect each of the participatory college's individuality and distinctiveness, by any way whatsoever.

[Signature]
30/06/18
Officer-in-Charge
Government Girls' General
Degree College
Kolkata

[Signature]
15/07/18
Witness
Co-ordinator
IOAC

[Signature]
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

Witness

[Signature]
Principal
Government Girls' General
Degree College
Kolkata

[Signature]
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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OFFICE OF THE PRINCIPAL
Maulana Azad College
8, RAFI AHMED KIDWAI ROAD, TALTALA, KOLKATA 700013



Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com
Website: <https://maulanaazadcollegekolkata.ac.in>

1. Dr. Ajanata Mukherji, Assistant Professor, Dept. of Chemistry, Maulana Azad College gave a lecture as an invited resource person in the One-day seminar titled "Way to a Greener World" organized by Government Girls' General Degree College, Ekbalpore, on 20th September, 2019.

Notice of the Event

Government Girls' General Degree College
7, Mayur Bhanj Road, Kolkata -700023

Notice

Seminar committee (Science) in collaboration with Physics, Chemistry and Geography Department is organizing a One-Day seminar titled "Way to a Greener World" in college on 20.09.2019.

All the teachers and students are requested to register on or before 15.09.2019 with Rs.100/- registration fee.


Signature

Convener
Seminar Committee (Science)


Signature

Officer-in-Charge
Government Girls' General Degree College
Kolkata

List of registered participants (Total 20 teachers and 41 students attended the event out of which 4 students and 2 teachers were from Maulana Azad College)

GOVERNMENT GIRLS' GENERAL DEGREE COLLEGE
7, MAYUR BHANJ ROAD, KOLKATA - 700023
One Day Seminar on
"Way to a Greener World"

Organized by
Seminar Committee (Science) in collaboration with Physics, Chemistry and Geography Department

LIST OF PARTICIPANTS

Sl. No.	Name of the Participant	Designation	Affiliation	Department	Signature of the Participant
1	Dr. Vinod Chandra Mukherjee	Officer-in-Charge & Associate Professor	Government Girls' General Degree College (Ekbalpore)	Physics	
2	Dr. Manu Chakrabarty	Convener Seminar Committee (Physics, Chemistry & Geography)	Government Girls' General Degree College (Ekbalpore)	Chemistry	
3	Dr. Smita Das	Teacher/Classroom Secretary & Associate Professor	Government Girls' General Degree College (Ekbalpore)	English	
4	Dr. Debapriya Dasgupta	MOE (Assistant Professor & Head)	Government Girls' General Degree College (Ekbalpore)	English	
5	Dr. Biswajit Bhattacharya	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	Chemistry	
6	Dr. Rajanika Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
7	Dr. Soma Mondal	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	Physics	
8	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	Physics	

Sl. No.	Name of the Participant	Designation	Affiliation	Department	Signature of the Participant
9	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	Chemistry	
10	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
11	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
12	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
13	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
14	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
15	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
16	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
17	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
18	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
19	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	
20	Dr. Anil Chakrabarty	MOE (Assistant Professor)	Government Girls' General Degree College (Ekbalpore)	English	


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Kolkata


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Website: <https://maulanaazadcollegekolkata.ac.in>

Sl. No.	Name of The Participant	Department	Affiliation	Department	Session of The Participant
21	Dr. Sanjib Dasgupta	Amritsar	Govt. College General Degree College, Amritsar	Amritsar	2019-2020
22	Dr. Kapil Kumar	Amritsar	Govt. College General Degree College, Amritsar	Amritsar	2019-2020

Sl. No.	Name of The Participant	Department	Affiliation	Department	Session of The Participant
1	Rahul Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session I
2	Rudra Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session I
3	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session I
4	Rudra Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session I
5	Tanishk Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session I
6	Shreyas Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session I
7	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II

Contd. LIST OF PARTICIPANTS

Sl. No.	Name of The Participant	Department	Affiliation	Department	Session of The Participant
3	Pratik Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session II
4	Saravjit	Maths	Government College Degree College, Kolkata	Geography	Session II
5	Shreyas Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session II
6	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
7	Shreyas Choudhary	Maths	Government College Degree College, Kolkata	Geography	Session II
8	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
9	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
10	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
11	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
12	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
13	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
14	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
15	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
16	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
17	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II

Contd. LIST OF PARTICIPANTS

Sl. No.	Name of The Participant	Department	Affiliation	Department	Session of The Participant
18	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
19	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
20	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
21	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
22	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
23	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
24	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
25	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
26	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
27	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II

Contd. LIST OF PARTICIPANTS

Sl. No.	Name of The Participant	Department	Affiliation	Department	Session of The Participant
28	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
29	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
30	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
31	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
32	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
33	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
34	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
35	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
36	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
37	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II

Contd. LIST OF PARTICIPANTS

Sl. No.	Name of The Participant	Department	Affiliation	Department	Session of The Participant
38	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
39	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
40	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
41	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
42	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
43	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
44	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
45	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
46	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II
47	Arif Khan	Maths	Government College Degree College, Kolkata	Geography	Session II

Signature
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Photographs of Dr. Ajanta Mukherji delivering her talk in the event and her felicitation by Dr. D.P. Banerjee, Associate Professor and Head, Dept. of English, Government Girls' General Degree College



2. Conduction of classes under Faculty exchange programme

Date	Department and College	Semester	Course Code	Topics	Teachers Involved	Affiliating College	Number of students
13.3.2023 to 17.04.23	Chemistry, Government Girls' General Degree College	Sem IV	Chemistry (CC9 - Practical)	Physical chemistry	Dr. Rajendra Saha, Associate Professor, Dept. of Chemistry, Maulana Azad College and Dr. Subhdeep Samanta	Dept. of Chemistry, Maulana Azad College	3



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Photographs of Dr. Rajendra Saha and Dr. Subhodip Samanta, taking classes of students from both Maulana Azad College and Ekbalpur College at the Dept. of Chemistry, Maulana Azad College



Copy of relevant pages of the Attendance Register

STUDENTS' ATTENDANCE REGISTER
SUBJECT CC-0 (PM)
2023
ATTENDANCE FOR THE MONTH

Sl. No.	Roll No.	NAME OF STUDENTS	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
MAULANA AZAD COLLEGE	1.	Diptansu Chakraverty	11	12	13	14	15	16	17	18	19	20						
	2.	Pranab Kumar Saha	11	12	13	14	15	16	17	18	19	20						
	3.	Souravjit Ghosh	11	12	13	14	15	16	17	18	19	20						
	4.	Abhishek Halder	11	12	13	14	15	16	17	18	19	20						
	5.	Prasen Roy	11	12	13	14	15	16	17	18	19	20						
	6.	Ajay Das	11	12	13	14	15	16	17	18	19	20						
	7.	Arshad Faruq	11	12	13	14	15	16	17	18	19	20						
GDC EKBALPUR COLLEGE		BANSHARI GUPTA (GDC Ekbalpur (Govt Degree College) Taltala)	11	12	13	14	15	16	17	18	19	20						
		ARSHADI PARVEEN	11	12	13	14	15	16	17	18	19	20						
		AFSHAM PARVEEN	11	12	13	14	15	16	17	18	19	20						

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Activities under MoU between Maulana Azad College, Kolkata 700013 and

Garbage Free India, Kolkata 700071

Start date of MoU: 15.06.2023

End date of MoU: Continuing

Duration: 3 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Joint organization of training cum workshop session</u> A training cum workshop session was jointly organized by NSS Unit, Maulana Azad College & Garbage Free India (GFI), Kolkata	26.06.2023	26.06.2023	Maulana Azad College, Kolkata.	58
2.	<u>Inauguration of seven days special camp of NSS in association with GFI</u> Flag ceremony of NSS, plantation in the medicinal plant garden	01.03.2024	1.03.2024	Maulana Azad College, Kolkata	22
3.	<u>Celebration of World Biodiversity Day in collaboration with GFI</u> Inauguration of leaf composting unit and bird feeding in the college garden	22.05.2024	22.05.2024	Maulana Azad College, Kolkata	15



Director

Garbage Free India

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

Principal

Maulana Azad College



**Report on status of MOU signed between Maulana Azad College, Kolkata-13 and
Garbage Free India, Kolkata 700071**

➤ **DATE of SIGNING THE MOU:** 15.06.2023

➤ **OBJECTIVE/ PURPOSE:**

Initiate an academic collaboration between the two organizations for proper environment friendly sustainable management, disposal or recycling (wherever applicable) of different types of waste generated in the college, create community environmental awareness and sensitize the community on good practices.

Yearwise activities conducted under MoU

1) Waste management training cum workshop

(i) **Name of the Activity:** Waste management training cum workshop

(ii) **Category of Activity:** Seminar

(iii) **Organizing Unit of the College:** NSS Unit, Maulana Azad College & Garbage Free India (GFI)

(iv) **Date, Time, Duration, Venue:** 22nd June 2023, 2P.M, 2 Hrs, College Seminar Room.

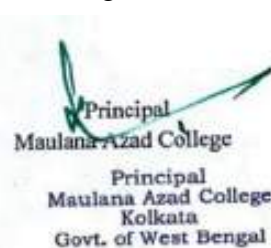
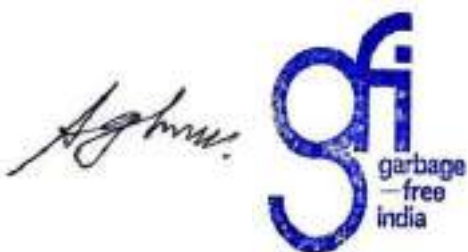
(v) **No. of Students and Teachers participated:** 60 students, teachers and non-teaching staffs have participated.

(vi) **Brief Description of the activity:** On June 26th, 2023, the NSS Unit Maulana Azad College orchestrated an impactful waste management workshop cum training in association with Garbage Free India (GFI) NGO. The event aimed to sensitize participants about responsible waste disposal and the significance of environmental sustainability by showing practical demonstrations on waste segregation, recycling methods, and the impact of improper waste disposal on ecosystems.

(vii) **Outcome/impact of the activity:** The workshop successfully instilled a sense of responsibility among attendees, encouraging them to adopt eco-friendly practices in their

daily lives. Such initiatives play a crucial role in promoting a cleaner and greener environment, aligning with the college's commitment to social and environmental responsibility.

(viii) **Any Award/ Recognition received for the**





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activity (e-copy of Award letters to be preserved): None

- (ix) **List of Students and Teachers Participated:** Signature of the participants in attendance sheet is attached.

Copy of notice of the event

Office of the Principal
Maulana Azad College, Kolkata

06/06/23

Notice No. 92

This is to notify that Garbage Free India (GFI) is going to organize an awareness and workshop programme in association with NSS Unit Maulana Azad College & IQAC, MAC on Thursday, 22nd June 2023 from 12 Noon to 2 PM in the seminar hall of this college. All the students, faculty members and non-teaching staffs are requested to participate in this awareness workshop program to make this event a grand success. NSS volunteers of Sem 5 and Sem 3 must attend the program positively.

Shabbacharya 6/06/23
Program Officer

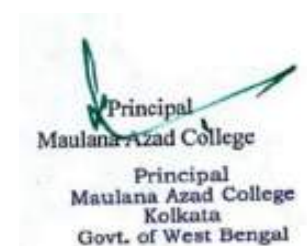
NSS Unit, Maulana Azad College
Programme Officer
NSS UNIT
Maulana Azad College
Rafi Ahmed Kidwai Road
Kolkata-700013

Ans 06/06/23
IQAC Co-coordinator

Maulana Azad College
Co-ordinator
IQAC
Maulana Azad College
Govt. of West Bengal
8, R.A. Kidwai Road, Kol.-13

[Signature]
Principal

Maulana Azad College
Principal
Maulana Azad College
Kolkata





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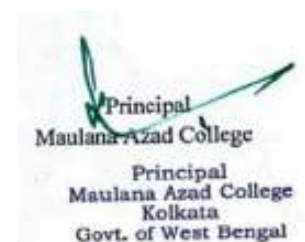


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Sl. No.	Name	Subject	Signature
1	Abdul Mannan Khan	Arabic (H)	[Signature]
2	M. Moinuddin Khan	Arabic (H)	[Signature]
3	[Signature]	[Signature]	[Signature]
4	[Signature]	[Signature]	[Signature]
5	[Signature]	[Signature]	[Signature]
6	[Signature]	[Signature]	[Signature]
7	[Signature]	[Signature]	[Signature]
8	[Signature]	[Signature]	[Signature]
9	[Signature]	[Signature]	[Signature]
10	Mangalita Dey	History (H)	[Signature]
11	[Signature]	[Signature]	[Signature]
12	A. K. M. Akbarul Haque	[Signature]	[Signature]
13	Sahil Islam	[Signature]	[Signature]
14	[Signature]	[Signature]	[Signature]
15	[Signature]	[Signature]	[Signature]
16	[Signature]	[Signature]	[Signature]
17	[Signature]	[Signature]	[Signature]
18	[Signature]	[Signature]	[Signature]
19	[Signature]	[Signature]	[Signature]
20	[Signature]	[Signature]	[Signature]
21	[Signature]	[Signature]	[Signature]
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23	[Signature]	[Signature]	[Signature]
24	[Signature]	[Signature]	[Signature]
25	[Signature]	[Signature]	[Signature]
26	[Signature]	[Signature]	[Signature]
27	[Signature]	[Signature]	[Signature]
28	[Signature]	[Signature]	[Signature]

Attendance Sheet 1 with signature of the participants





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(XI) Photographs of the activity:



Agha
gfi
garbage
- free
india

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Maulana Azad College
Principal
Maulana Azad College
Kolkata
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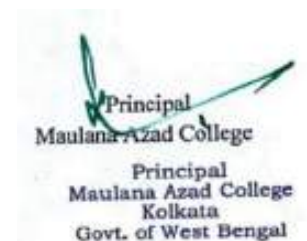
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2. Inauguration ceremony of NSS 7 days special camp

- (i) **Name of the Activity:** Inauguration ceremony of 7 days NSS special camp
- (ii) **Category of Activity:** Sapling plantation, hoisting of flag
- (iii) **Organizing Institute:** Maulana Azad College NSS Unit in association with Garbage Free India
- (iv) **Date, Time, Duration, Venue:** 01/03/2024, 10 AM -12PM, 2 hours,
- (v) **No. of Students and Teachers participated:** Almost 30 NSS Volunteers have participated in this program.
- (vi) **Target Beneficiaries:** Students

Brief Description of the activity: The NSS unit in collaboration with Garbage Free India (GFI) conducted its 7 days special camp from 1st March to 7th March 2024 with a vibrant inauguration ceremony on 1st March 2024 from 10 AM onwards. The respected member of parliament (MP) Sri Sudip Bandopadhyay inaugurated the 7 days special camp by NSS flag hoisting. He presided, inspiring participants with a call to service. Then the NSS Program officer Dr. Debalina Bhattacharya discussed about the plans of 7 days special camp with the volunteers. Enthusiastic volunteers pledged their commitment to the week-long program focused on Boinchtala village under Kolkata Municipal Corporation Ward No 57. NSS volunteers planted 15 medicinal plants in medicinal garden of the college. The team of Garbage Free India discussed about the importance of flowing plants in the garden to the volunteers. Next, they have made survey questionnaire for next day program in the local slum area surrounding the college.

- (vii) **Outcome of the activity:** This inauguration ceremony of special camp promises to be a rewarding experience for all involved.
- (viii) **List of Students and Teacher participated:** Attendance sheet of the participants with signature is attached.





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ATTENDANCE

01/03/24

NAME	DEPT	SEM	NSS/ NON-NSS
ZUHRA MARWAN MEDAWAR	IHCA	VI	✓ NSS
Raqiya Baro	IHCA	VI	NSS
WASIM AKRAM	ARABIC	VI	NSS
Md Zubair Rahman Molla	Arabic	VI	NSS
Subhagya Mondal	CHEMISTRY	I	NSS
Taiyeba Jabal	Political Science	I	NSS
Somada Ekatom	Political Science	I	NON-NSS
Abdul Masood	History	1st	NSS
Atab Hussain	Pol. Sci	1st	NSS
Mohibullah	Pol. Science	1st	NSS
Md Nazim Rasheed	Urdu	1st	NSS
Iktal Sik	Microbiology	VI	NSS
Abhin Saha	Microbiology	VI	NSS
Antara Naskar	Microbiology	VI	NSS
SRIJAN PAL	Microbiology	VI	NSS
Tapasya Prasad Sharma	Mathematics	1st	NSS
Sahag Mukherjee	Sociology	VI	NSS
Md Tabrez Alam	IHCA	VI	NSS
Ritu Laha	PLSA	VI	NSS
Neha Sanki	PLSA	VI	NSS
Pusya Prasad	PLSA	VI	NSS
Md			

Attendance sheet



Principal
Maulana Azad College
Principal
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Website: <https://maulanaazadcollegekolkata.ac.in>

(ix) Geo-tagged photographs of the activity:



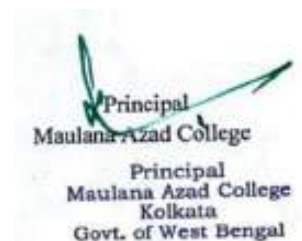
Honorable MP Sri Sudip Bandopadhyay hoisted the NSS Flag on 1st March 2024



Member of GFI explained the importance of flowering plants



Volunteers planting saplings in the college medicinal garden





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Notice of the event

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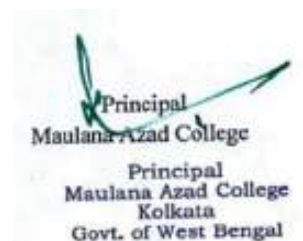
Notice No. 142 Dated 28/02/24

This is to notify that NSS Unit Maulana Azad College & IQAC is going to conduct inaugural program of special camp by planting sapling on college medicinal garden on 1st March 2024 from 12 PM in association with Garbage Free India. Our honorable MP Sri Sudip Bondopadhyay and Local Councilor will inaugurate the special camp. All the students, teachers and non-teaching staffs are requested to participate in this program. All the NSS volunteers of Sem 5 and Sem 1 must attend this program.

Abhaya Chatterjee
Program Officer
NSS Unit
Program Officer
NSS UNIT
Maulana Azad College
8, Rafi Ahmed Kidwai Road
Kolkata-700013

[Signature]
IQAC Coordinator
Maulana Azad College
Govt. of West Bengal
8, R.A. Kidwai Road, Kol.-13

[Signature]
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata





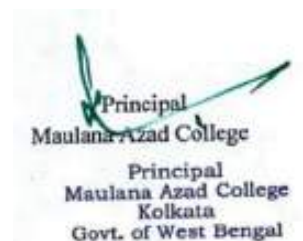
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3. Name of the Activity: World Biodiversity Day

- (i) **Category of Activity:** Extension activity
- (ii) **Organizing Institute:** Maulana Azad College NSS Unit in association with Garbage Free India
- (iii) **Date, Time, Duration, Venue:** 22/05/2024, 11 AM -1:30 PM, 2.5 hours, College Garden
- (iv) **No. of Students and Teachers participated:** Almost 32 NSS volunteers have participated in this program.
- (v) **Target Beneficiaries:** Students
- (vi) **Brief Description of the activity:** On the occasion of World Biodiversity Day, the NSS Unit of Maulana Azad College in collaboration with Garbage Free India (GFI) organized a series of events on May 22nd, 2024, to raise awareness about the importance of biodiversity conservation from 11 AM onwards. The day began with the installation of leaf composting unit in college garden, followed by an informative session on the threats to biodiversity and the steps we can take to protect it. NSS volunteers also performed labelling of trees with their identifying names & making birds feeders in the college garden.
- (vii) **Outcome of the activity:** The day's events culminated in a pledge by the students to adopt sustainable practices in their daily lives.
- (viii) **List of Students and Teacher participated:** Attendance sheet of the participants with signature is attached.





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OFFICE OF THE PRINCIPAL
Maulana Azad College



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Website: <https://maulanaazadcollegekolkata.ac.in>

Biodiversity Day

22 May, 2024

NAME	Dept	Semester	NSS Vol or other	Signature
Abdul Masood	History	2nd	NSS Vol	Abdul Masood
Archee Hamiya	Economics	4th	Other	Archee Hamiya
Shivini Panviti	Political Sci.	6th	Other	Shivini Panviti
Nasheed Anwar	philosophy	6th	Other	Nasheed A.
Prasanna Rana	Zoology	2nd	other	Prasanna Rana
Anandita Lakra	Zoology	2nd	other	Anandita Lakra
Zahra H. Medawani	IHCA	6th	NSS	Zahra H.
Rogaiya Bano	IHCA	6th	NSS	Rogaiya Bano
Sukhrajit Mandal	CHEM	1st	NSS	Sukhrajit Mandal
Aijya Ekmal	Pol	1st	NSS	Aijya Ekmal
Sania Astrom	URDU	3rd	NSS	Sania Astrom
MA TAREZ MAM	ENG (H)	2nd	NSS	MA TAREZ MAM
Anushka sen.	SOCIA (H)	4th	NSS	Anushka sen.
Muhammad Jassim Khan	SOON (H)	4th	NSS	Muhammad Jassim Khan
Debalina Bhattacharya	Microbiology	Faculty/P.O	NSS	Debalina Bhattacharya
Smaranayee Saha	Microbiology	Research scholar	non-NSS	Smaranayee Saha
Nait Majumder	Microbiology	2nd	non-NSS	Nait Majumder
Subhechhna Maji	Microbiology	2nd	non-NSS	Subhechhna Maji
Poulami Pal	Microbiology	2nd	non-NSS	Poulami Pal
Dipannita Bhattacharya	Microbiology	2nd	non-NSS	Dipannita Bhattacharya
Sumon Chakraborty	Microbiology	2nd	non-NSS	Sumon Chakraborty
Sagnik Bismal	Microbiology	2nd	non-NSS	Sagnik Bismal
Ananya Bagchi	Microbiology	2nd	non-NSS	Ananya Bagchi

Attendance sheet



Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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OFFICE OF THE PRINCIPAL
Maulana Azad College

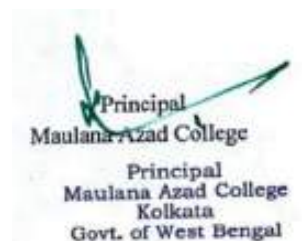


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(ix) Geo-tagged photographs of the activity:



Observation of World Biodiversity Day





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Notice of the event

Office of the Principal
Maulana Azad College, Kolkata

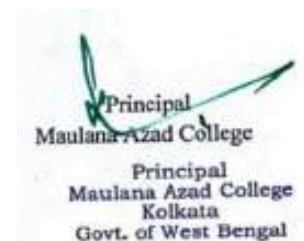
No: 173 NOTICE Date: 16/05/24

NSS Unit & IQAC of Maulana Azad College are going to observe Biodiversity Day on 22nd May 2024 from 11 AM to 12 Noon in college campus in collaboration with Garbage Free India (GFI). In this regard all the students, teachers, teaching associated staff are requested to join in this program. Attendance for all NSS volunteers is mandatory. All the committee members of NSS subcommittee are also requested to attend this program.

Debalina Bhattacharya
Program Officer, NSS Unit
Maulana Azad College
NSS UNIT
Maulana Azad College
Rafi Ahmed Kidwai Road
Kolkata-700013

[Signature]
IQAC Coordinator
Maulana Azad College
Co-ordinator
IQAC
Maulana Azad College
Govt. of West Bengal
G, R.A. Kidwai Road, Kol- 73

[Signature]
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata





GOVERNMENT OF WEST BENGAL

OFFICE OF THE PRINCIPAL

Maulana Azad College

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Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com

Website: <https://maulanaazadcollegekolkata.ac.in>

Activities under MoU between Maulana Azad College, Kolkata 700013 and

Seth Anandram Jaipuria College, Kolkata 700006

Start date of MoU: 23.08.2022

End date of MoU: Continuing

Duration: 3 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Faculty Exchange and Student Exchange Programme</u> Prof. Subir C. Dasgupta, Professor and Head, delivered an online lecture on Toxinology: an emerging area in biomedical science and its therapeutic application.	28.06.2023	28.06.2023	Seth Anandram Jaipuria College	51 from both colleges

Principal
Seth Anandram Jaipuria College
Kolkata

Principal
Seth Anandram Jaipuria College
Kolkata - 700 006

Principal
Maulana Azad College

Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

Principal
Seth Anandram Jaipuria College

Principal
Maulana Azad College



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Website: <https://maulanaazadcollegekolkata.ac.in>

**Report on the activities under MOU for Academic Collaboration between
Maulana Azad College Kolkata and Jaipuria College, Kolkata**

Date of Signing of MoU: 23.08.2022

- **TITLE OF THE EVENT: Toxinology: an emerging area in biomedical science and its therapeutic application**
 - **THEME OF THE EVENT/ PROGRAMME: WEBINAR** organized as a MoU activity by the Department of Zoology, Maulana Azad College, Kolkata-700013 with Seth Anandram Jaipuria College for the students and faculty members of both colleges.
- **ACADEMIC SESSION: 2022-2023**
- **DATE: 28.06.2023**
- **Speaker:** Prof. Subir Chandra Dasgupta
- **VENUE:** Online Google Meet platform
- **OBJECTIVE/ PURPOSE:** to aware the students regarding therapeutic applications of biomedical science.
- **TARGET AUDIENCE/ PARTICIPANTS:** Students and faculty members of Undergraduate and Postgraduate Departments from both Colleges
- **BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:**

Toxinology is the study of the toxins, poisons, and venoms from plants, animals, and microbes. The basic idea of Toxinology was discussed by the speaker. Toxinology and biomedical science is an emerging area of biological science. The therapeutic applications of biomedical science were described along with the process of the new therapies used in medical science.
- **EXPECTED OUTCOME:** Students have been enriched through this on line webinar so that they can perform these experiments themselves. The knowledge they have gathered in their theoretical classes were demonstrated in front of them for a better understanding.
- **Number of participants: 51**

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Seth Anandram Jaipuria College
Kolkata

Principal
Seth Anandram Jaipuria College
Kolkata - 700 005

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Maulana Azad College



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Website: <https://maulanaazadcollegekolkata.ac.in>

Notice of the Event

Notice

This is to notify that Zoology Department of Maulana Azad College and Jaipuria College are jointly organizing a seminar on "**Toxinology: An Emerging Area in Biomedical Science and its Therapeutic Applications**" on 28th June 2023 at 8 P.M. We are pleased to announce that the esteemed speaker for this event will be Prof. Subir Chandra Dasgupta (HOD of Zoology Department, Maulana Azad College).

We invite all students, faculty members, and researchers interested in biomedical science to attend this enlightening seminar. Prof. Subir Chandra Dasgupta's expertise and insights promise to make this event both informative and engaging.

For further details and registration, please contact the Zoology Department of Maulana Azad College or Jaipuria College

Date: 28th June 2023

Time: 8 PM

Venue: Virtual Mode

Head
Zoology Department
Maulana Azad College

Principal
Seth Anandram Jaipuria College
Kolkata

Principal
Seth Anandram Jaipuria College
Kolkata - 700 066

Principal
Maulana Azad College

Co-ordinator
IQAC
Maulana Azad College
Govt. of West Bengal
B. R. A. Kidwai Road, Kol-17

Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

Principal
Seth Anandram Jaipuria College
Kolkata - 700 066

Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Website: <https://maulanaazadcollegekolkata.ac.in>

Flyer of the event:

**SERIES OF LECTURES
ON
CONTEMPORARY ISSUES OF ZOOLOGY**

organized by
**Department of Zoology, Seth Anandram Jaipuria College
and
Department of Zoology, Maulana Azad College**

**Lecture 1
Toxinology: an emerging area in biomedical science
and its therapeutic application**

**Speaker: Dr. Subir Chandra Dasgupta
Professor & Head
Department of Zoology
Maulana Azad College, Kolkata**

Date and Time: 28/06/2023; 8 pm onwards

VIRTUAL MODE
Google Meet joining link:
<https://meet.google.com/sfx-zjuw-vgy>

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Seth Anandram Jaipuria College
Kolkata

Principal
Seth Anandram Jaipuria College
Kolkata - 700 005

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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➤ Screenshots of the event and attendance of participants




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Kolkata

Principal
Seth Anandram Jaipuria College
Kolkata - 700 005




Principal
Maulana Azad College
Kolkata
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Bioresource Technology Reports

Volume 26, June 2024, 101830

Degradation and molecular docking of Curli to scout aggregation complexion

Nisha Bhat ^a, Tirthankar Roy ^a, Shritoma Sengupta ^b, Maitree Bhattacharyya ^c  ,
Samudra Prosad Banik ^d, Pijush Basak ^c  

Show more 

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<https://doi.org/10.1016/j.biteb.2024.101830> 

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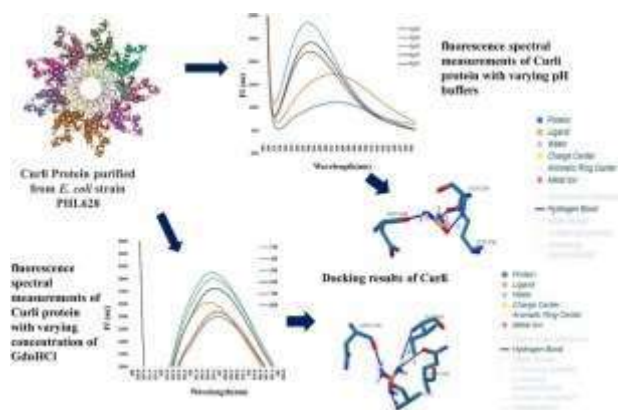
Highlights

- *E. coli* PHL628 capable of producing an extracellular protein fibril Curli
- Intrinsic fluorescence variation of Curli due to effect of pH, Urea and GdnHCl
- Changing dynamics of Curli by UV-absorption, fluorescence anisotropic measurements
- Extrinsic fluorescence variation by ANS, representing time interval of denaturation
- Molecular docking revealed the interaction of Curli with Urea and GdnHCl.

Abstract

Curli, an extracellular protein fibril produced by certain gram-negative enteric bacteria, is responsible for neuro-degenerative diseases due to spontaneous misfolding of soluble proteins. This study investigates the effect of denaturing agents (Urea, Guanidine Hydrochloride) and varying pH (2–11) on the conformation of Curli protein, isolated from *E. coli* PHL628, due to changes in the external environment. The study focuses on the changing dynamics of the protein using intrinsic fluorescence property, UV-absorption, fluorescence anisotropic measurements, and extrinsic fluorescence property with the help of interaction with 1-anilinonaphthalene-8-sulphonate (ANS). The data showed that the absorption maximum (λ_{\max}) of protein was altered in variation of denaturant concentration and buffer pH. Molecular docking results revealed the interaction of Curli with Urea and GdnHCl, by comparing structural changes. This study determines how denaturants and changes in the external environment cause denaturation or modification in the folded structure of Curli protein and provides insight into binding sites of Curli with denaturants.

Graphical abstract



[Download: Download high-res image \(155KB\)](#)

[Download: Download full-size image](#)

Introduction

Protein or peptide misfolding is considered to be the precursor for the generation of amyloid fibrils, which are involved in causing different neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease (PD), Huntington's disease (Perov et al., 2019; Das et al., 2020; Stafshede, 2021). X-ray fiber diffraction detected that the amyloid fibrils are typically 7–13 nm in diameter and possess cross- β structure, in which β -strands are



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Website: <https://maulanaazadcollegekolkata.ac.in>

Activities under MoU between Maulana Azad College, Kolkata 700013 and

Kanyashree College, Behala, Kolkata 700034

Start date of MoU: 14.06.2023

End date of MoU: Continuing

Duration: 3 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Resource person in Workshop under Faculty Exchange Programme</u> A Workshop for UG Sem II and Sem IV students of Mathematics on “Ordinary & Partial Differential Equation” where one of the two invited resource persons was Dr. Bimal Kumar Sett, Assistant Professor, Dept. of Mathematics, Kanyashree College, Behala, Kolkata.	24.06.23	28.06.2023	Maulana Azad College, Kolkata.	53
2.	<u>Faculty Exchange Programme</u> Dr. Abhishek Dey, Assistant Professor, Dept. of Physics is taking classes of UG Sem I and Sem IV students of Information Technology (BCA) Dept. at Kanyashree college. Dr. Bimal Kumar Sett, Associate Professor, Dept. of Mathematics is taking classes of UG Sem IV and Sem VI of Mathematics at Maulana Azad College.	01.07.23 onwards 01.07.23 onwards	Continuing Continuing	Kanyashree College Maulana Azad College	15 52


Principal
KANYASHREE COLLEGE
(Govt. College for Girls)
Behala, Kolkata

Principal
Kanyashree College


Principal
Maulana Azad College
Kolkata
Govt. of West Bengal

Principal
Maulana Azad College



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**Report on the activities under MOU for Academic Collaboration between
Maulana Azad College Kolkata and Kanyashree College**

- **DATE of SIGNING THE MOU: 14.06.2023**
- **OBJECTIVE/ PURPOSE:**
Initiate an academic Collaboration between departments of Maulana Azad College and Kanyashree College which would benefit the students and faculty members of both the institutions in their pursuit of academic excellence through faculty exchange programmes, Joint organization of seminars/conferences and workshops, joint initiation of social outreach programmes etc.
- **TARGET AUDIENCE/ PARTICIPANTS:** Students and faculty members of both Institutions
- **VENUE:** Maulana Azad College and Kanyashree College campus
- **EXPECTED OUTCOME:**
Students and faculty members of both Institutions will be benefited in terms of their academic pursuit in areas of Joint conference organization, student exchange, faculty exchange, training to students in the areas of teaching, innovation and entrepreneurship. Exchange of academic materials and publications, conducting lecture, undertaking joint research cum project work etc.

Report of yearwise activities conducted

A) Before initiation of MOU as linkage between two Institutions

2020-21: Faculty exchange programme

Dr. Mahua Patra, Assistant Professor, Dept. of Sociology, Maulana Azad College took GE 3 & 4 Sociology classes of Geography Hons. students and Smt. Jayeeta Saha Nag, Assistant Professor, Dept. of Economics, Maulana Azad College took Economics GE 1 & 2 classes of Geography Hons. students in the Kanyashree College.

Number of students enrolled: 6

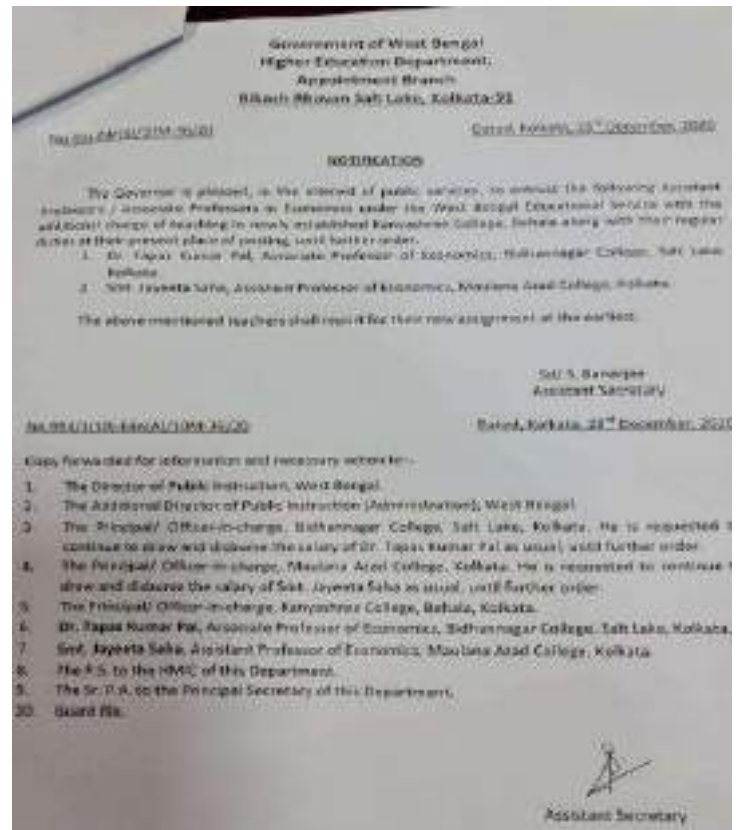
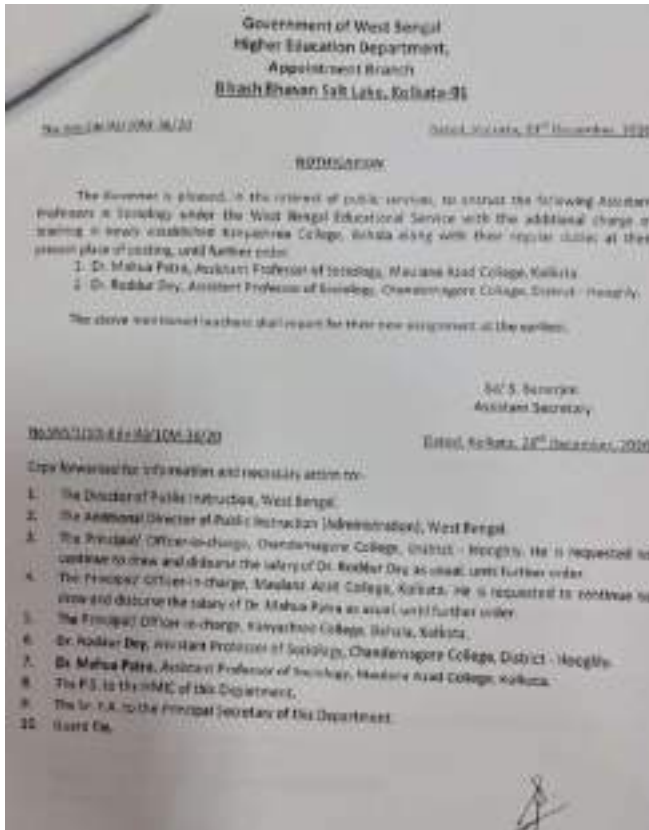


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Website: https://maulanaazadcollegeskolkata.ac.in



Copy of Appointment letters and class routine of Dr. Mahua Patra and Smt. Jayeeta Saha Nag



KANYASHREE COLLEGE, BEHALA
SESSION: JULY-JUNE, 2021-22
W.B. EDUCATION DEPARTMENT
KANYASHREE COLLEGE, BEHALA, KOLKATA

Sl. No.	Teacher's Name	Grade	Subject	Class	Days	Time	Remarks
1	Dr. Mahua Patra	AP	Sociology	10	Mon	10:00 AM - 12:00 PM	
2	Dr. Radhika Dey	AP	Sociology	10	Tue	10:00 AM - 12:00 PM	
3	Dr. Tapas Kumar Pal	AP	Economics	10	Wed	10:00 AM - 12:00 PM	
4	Smt. Jayeeta Saha	AP	Economics	10	Thu	10:00 AM - 12:00 PM	
5	Dr. Mahua Patra	AP	Sociology	10	Fri	10:00 AM - 12:00 PM	
6	Dr. Radhika Dey	AP	Sociology	10	Sat	10:00 AM - 12:00 PM	
7	Dr. Tapas Kumar Pal	AP	Economics	10	Sun	10:00 AM - 12:00 PM	
8	Smt. Jayeeta Saha	AP	Economics	10	Mon	10:00 AM - 12:00 PM	

Sd/- S. Banerjee, S.O. to the Principal Secretary of this Department.
Sd/- S. Banerjee, S.O. to the Principal Secretary of this Department.
Sd/- S. Banerjee, S.O. to the Principal Secretary of this Department.
Sd/- S. Banerjee, S.O. to the Principal Secretary of this Department.



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2022-23:

Dr. Mahua Patra, Assistant Professor, Dept. of Sociology, Maulana Azad College took GE 3 & 4 Sociology classes of Geography Hons. students and Smt. Jayeeta Saha Nag, Assistant Professor, Dept. of Economics, Maulana Azad College took Economics GE 1 & 2 classes of Geography Hons. students in the Kanyashree College.

Copy of class routine of Dr. Mahua Patra and Smt. Jayeeta Saha Nag

KANYASHREE COLLEGE, BEHALA
SESSION: JULY-JUNE, 2022-23
B.SC. GEOGRAPHY (HONOURS)
ROUTINE FOR 1ST, 3RD AND 5TH SEMESTERS
W.E.F. 12.08.2022

Day	Semester	10:30 - 11:30am	11:30 - 12:30pm	12:30 - 1:30pm	1:30 - 2:30 pm	2:30 - 3:30pm	3:30 - 4:30pm
Mon	Sem - I	CC (SKS)	GE (TB)	GE (TB)	R	CC (S)	
	Sem - III		CC (RES)		=	GE - (PP)	GE (PP)
	Sem - V		CC (S)	CC (S)	=	DSE (MS)	DSE (SKS)
Tue	Sem - I	CC (S)		GE (TB)	*	ABCC - (MS/DSE)	
	Sem - III		CC (SKS)	CC (SKS)	*	GE - (PP)	
	Sem - V		CC (S)		0†	DSE (S)	
Wed	Sem - I	CC (S)	CC (SKS)		†	GE (TB)	GE (PS)
	Sem - III		CC (S)	CC (SKS)	†	GE (MP)	GE (MP)
	Sem - V	DSE (SKS)		CC (S)	†	DSE (TB)	
Thu	Sem - I		CC (S)	GE (TB)	*	ABCC - (DM/DKM)	
	Sem - III		GE (TB)	GE (TB)	*	CC (SD)	CC (S)
	Sem - V	CC (SKS)	CC (SKS)	CC (SKS)	†	CC (S)	
Fri	Sem - I	CC (SKS)		CC (SKS)	W	GE (DP)	GE (TB)
	Sem - III		CC (S)	CC (SKS)	†	CC (SKS)	
	Sem - V		DSE (SKS)		†	CC (S)	CC (SKS)
Sat	Sem - I	CC (S)					
	Sem - III		CC (S)	CC (SKS)			
	Sem - V		CC (SKS)	DSE (PP)			

Dr. Rajat Roy
 PRINCIPAL
 Kanyashree College
 8/8, D.K. Road, Behala, Kolkata

J. CONVENTORS
 Routine Sub-Committee



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Website: <https://maulanaazadcollegeskolkata.ac.in>



Snapshots of Dr. Mahua Patra and Smt. Jayeeta Saha Nag with students of Kanyashree College



Activities after MOU (Year of report – 2022-23)

1. Name of the Activity: A Workshop on “Ordinary & Partial Differential Equation”.

Date: 24.06.2023 to 28.06.2023

Venue: Dept. of Mathematics, Maulana Azad College

Resource Persons:

1. Dr. Bimal Kumar Sett, Assistant Professor, Dept. of Mathematics, Kanyashree College
2. Dr. Debasish Biswas, Assistant Professor, Dept. of Mathematics, Calcutta Girls' College

Number of participants: 53

Brief Report of the event: The Department of Mathematics has organized a Workshop on “Ordinary & Partial Differential Equation” from 24.06.2023 to 28.06.2023 for the students of Mathematics honours. All the 53 students of



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Website: <https://maulanaazadcollegeskolkata.ac.in>

Semester-2 & Semester-4 actively participated in this Workshop. The participants were enriched by learning the techniques for solving the ODE & PDE using computer programming. In the feedback session the students requested for arranging such Workshop at least two in an academic session.

Permission letter from Principal, Maulana Azad College regarding workshop

To

June 19, 2023

The Principal

Maulana Azad College
8, Rafi Ahmed Kidwai Road,
Kolkata 700013.

Sub: Permission for a Workshop on "**Ordinary & Partial Differential Equation**".

Respected Sir,

The Department of Mathematics has decided in the meeting held on 15th June 2023 that a Workshop on "**Ordinary & Partial Differential Equation**" will organize from 24.06.2023 to 28.06.2023. The main objective of this Workshop is to motivate the students for several entrance examinations like JAM, TIFR, CMI, etc.

Dr. Debashis Biswas, Assistant Professor, Department of Mathematics, Calcutta Girls' College and Dr. Bimal Kumar Sett, Assistant Professor, Kanyashree College, Behala are agreed to deliver lectures on the above-mentioned Workshop.

We shall be very grateful if you would kindly give your permission to organize this Workshop.

With Regards


(Somnath Bandyopadhyay)

Head

Department of Mathematics





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Programme Schedule of the workshop

Maulana Azad College
Department of Mathematics

Workshop on “**Ordinary & Partial Differential Equation**”.

Date: **24th June, 2023**

Tentative programme schedule:

11:00 A.M. to 11.20 A.M.	Enrollment of Participants.
11:20 A.M. to 11:25 A.M.	Inaugural lecture by Principal, Maulana Azad College
11:25 A.M. to 11:30 A.M.	Speech by IQAC Coordinator, Maulana Azad College
11:30 A.M. to 1:00 P.M.	Lecture-1 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
1:00 P.M. to 1:15 P.M.	Break
1:15 P.M. to 2:45 P.M.	Lecture-1 on Partial Differential Equation by Dr. Debashis Biswas.
2:45 P.M. to 4:45 P.M.	Problem Solving on both topics

Date: **26th June, 2023**

11:00 A.M. to 1:00 P.M.	Lecture-2 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
1:00 P.M. to 1:15 P.M.	Break
1:15 P.M. to 3:00 P.M.	Lecture-2 on Partial Differential Equation by Dr. Debashis Biswas.
3:00 P.M. to 4:30 P.M.	Problem Solving on both topics.

Date: **27th June, 2023**

11:00 A.M. to 1:00 P.M.	Lecture-3 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
1:00 P.M. to 1:15 P.M.	Break
1:15 P.M. to 3:00 P.M.	Lecture-3 on Partial Differential Equation by Dr. Debashis Biswas.
3:00 P.M. to 4:30 P.M.	Solution of ODE and PDE using computer programming.

Date: **28th June, 2023**

11:00 A.M. to 12:00 P.M.	Lecture-4 on Ordinary Differential Equation by Dr. Bimal Kumar Sett.
12:00 P.M. to 1:00 P.M.	Lecture-4 on Partial Differential Equation by Dr. Debashis Biswas.
1:00 P.M. to 1:30 P.M.	Break
1:30 P.M. to 2:30 P.M.	MCQ Test on both topics.
2.30 P.M to 3.00 P.M	Feedback from participants.
3.00 P.M to 3.30 P.M	Valedictory Session and Certificate distribution.



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Website: <https://maulanaazadcollegeskolkata.ac.in>



Attendance record of participants:

Department of Mathematics
Attendance for the Workshop on "Ordinary Partial Differential Equation".

Sl. No.	Name	Signature
1	ABHIJEET SAHA	Abhijeet Saha
2	ANKANA SARKAR	Ankana Sarkar
3	ANKIT DAS	Ankit Das
4	ARCHIRSHMAN ROY	Archirshman Roy
5	BISWAJIT SHEE	Biswajit Shee
6	CHITRITA HAZRA	Chitrita Hazra
7	KISMAT KHANAL	Kismat Khanal
8	KRISHNENDU GHOSH	Krishnendu Ghosh.
9	MD SAFIR UDDIN	Md. Safiruddin.
10	MD ZEESHAN ALAM	Md. Zeeshan Alam
11	MD KAIF ALAM	Md. Kaif Alam.
12	MEGHA MONDAL	Megha Mondal.
13	NABEELA JAHAN	Nabeela Jahan
14	NUR AKTAR JAMIL	Nur Aktar Jamil
15	PALASH KARMAKAR	Palash Karmakar
16	PREET CHOKHANI	Preet Chokhani
17	RANAJIT GHOSH	Ranajit Ghosh
18	RITAJA GHOSH	Ritaja Ghosh
19	SAMIRAN DAS	Samiran Das
20	SK IMROZ ALI	Sk Imroz Ali
21	SOMYAJIT SAHA SAHA	Somyajit Saha
22	SRIJAN DAS	S. Das
23	SUBHRO CHAKRABORTY	Subhro Chakraborty.
24	SUVECCHA BHATTACHARYYA	Suveccha Bhattacharyya
25	TANISHA RAJAK	Tanisha Rajak
26	TITLI BISWAS	Titli Biswas



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Department of Mathematics
Attendance for the Workshop on "Ordinary Partial Differential Equation".

27	ANIRBAN KARAN	Anirban Karan
28	ARHANA DAS	Arhana Das
29	ARNAB CHHARI	Arnab Chhari
30	MASTURA PARVIN	Mastura Parvin
31	MASUDUZZAMAN GAZI	Masuduzzaman Gazi
32	MASUM YEHANA	Masum Yehana
33	NILAVO ROY	Nilavo Roy
34	NIRMALYA NASKAR	Absent
35	PROMIT BHATTACHARYA	Promit Bhattacharya
36	PUSKAR DAS	Puskar Das
37	RAKHI HAZRA	Rakhi Hazra
38	RANJAN PATRA	Ranjan Patra
39	SAGNIK BEJ	Sagnik Bej
40	SAMUDRA MITRA	Samudra Mitra
41	SAYAN DUTTA	Sayan Dutta
42	SENEPTA YEASMIN GOLDER	Seneptha Yeasmin Golder
43	SHINJAN MUKHERJEE	Shinjan Mukherjee
44	SHRESTHA SATPATHI	Shrestha Satpathi
45	SHREYA BASAK	Shreya Basak
46	SHUBHAJIT GHOSH	Shubhajit Ghosh
47	SK SAID HOSEN	Absent
48	SK SAIDUL ISLAM	Absent
49	SOHEL SK	Sohel SK
50	SOUMYADIP GHOSH	Soumyadip Ghosh
51	SUBHANJAN MAHATA	Subhanjan Mahata
52	SUJAY BANERJEE	Sujay Banerjee
53	SUMIT MANDAL	Sumit Mandal
54	SUNEETH DEBNATH	Suneeth Debnath
55	SUPRATIM MANDAL	Supratim Mandal
56	SUSHOVAN JANA	Sushovan Jana

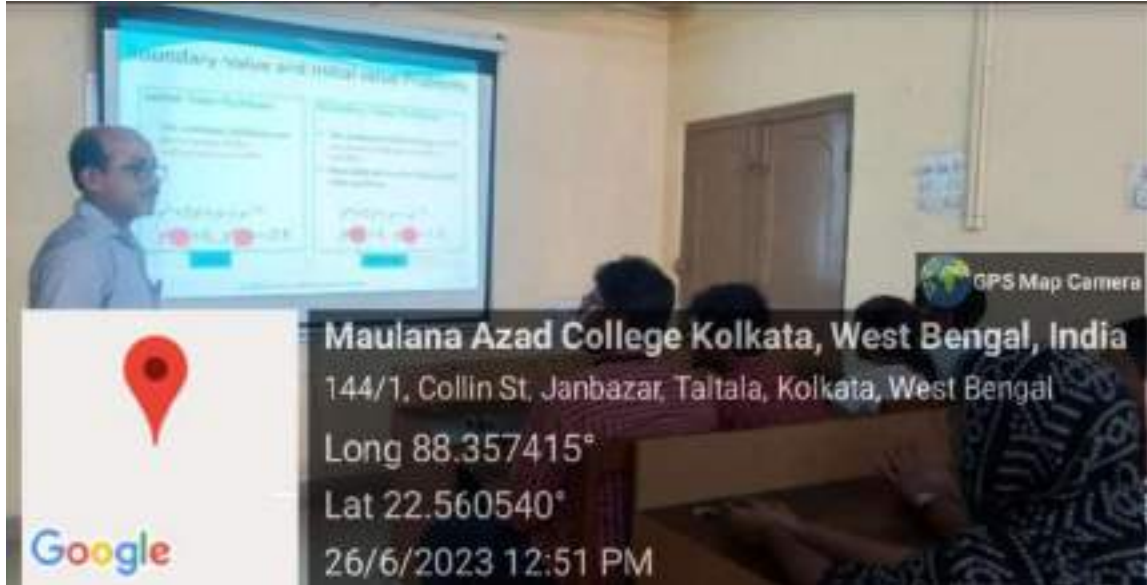


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Photographs of the event





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1. Name of the activity: Faculty exchange Programme

Date	Department	Semester	Course Code	Topics	Teachers Involved	Affiliating College	Number of students
01.07.23 onwards	Information Technology (BCA)	Sem I	BCAC403 and BCAC493	Programming for Problem Solving through C Python programming	Dr. Abhishek Dey, Assistant Professor, Dept. of Physics	Maulana Azad College	6 (Sem I)
		Sem IV					9 (Sem IV)
01.07.23 onwards	Mathematics	Sem IV	CC10	Statics	Dr. Bimal Kumar Sett, Assistant Professor, Dept. of Mathematics	Kanyashree College	26 (Sem IV)
		Sem VI	CC14	Numericals			26 (Sem VI)

Copy of letters from Principals of both colleges regarding the faculty Exchange Programme





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Class going on at Maulana Azad College
by Dr. Bimal Kumar Sett



Class going on at Kanyashree college by
Dr. Abhishek Dey





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Dated:01.06.2023

TO WHOM IT MAY CONCERN

I am glad to certify that the Department of Microbiology, Maulana Azad College, 8 Rafi Ahmed Kidwai Road, Kolkata 700013 has an active linkage with the Microbiologists Society India (MSI), West Bengal Unit, for joint organization of seminars, workshops and other student centric activities between the period of 2021 to 2023. In the said period, the Department had organized two such events in collaboration with the Society and many students from the Department have taken the Annual Membership of the Society. Few faculty members of the Department have also become The activities in this regard are continuing in full-fledge till date.

I express my sincere gratitude to Dr. Arvind M. Deshmukh, President, MSI, Dr. Biprانش Kumar Tiwary, State President, West Bengal Unit of MSI and Dr. Swapna Mukherjee, National Secretary, MSI Unit for letting us be a part of this nationwide programme for the benefit of the students. We will continue this linkage forward for the betterment of science education especially in the field of microbiology in schools and colleges.


Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



MICROBIOLOGISTS SOCIETY, INDIA

(Reg. No. MAH/4814/SAT)

Office,

Dr. Swapna Mukherjee
National Secretary
Email: swamuk15@gmail.com
Contact No. +91 9433826375

C-2/12, Parijatak Apartment,
Naikwadi Nagar
Osmanabad 413 501, (M.S.), INDIA.
Email Id- mbiosociety@gmail.com

Date: 27.5.23

TO WHOM IT MAY CONCERN

I am glad to certify that the Department of Microbiology, Maulana Azad College, 8 Rafi Ahmed Kidwai Road, Kolkata 700013 has an active linkage with the Microbiologists Society India, West Bengal Unit for joint organization of seminars, workshops and other student centric activities between the period of 2021 to 2023. In the said period, the Department had organized two such events in collaboration with our Society and many students from the Department have taken the Annual Membership of the Society. The activities in this regard are continuing in full-fledge till date.

I express my congratulations and gratitude to Principal, Maulana Azad College as well as to all the faculty members of the Department of Microbiology of this college for making this linkage successful. We will continue this linkage forward for the betterment of science education especially in the field of microbiology in schools and colleges.

Dr. Swapna Mukherjee
National Secretary
Microbiologists Society, India



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Report on Academic Linkage between Microbiologists Society India, West Bengal Unit and Department of Microbiology, Maulana azad College

Microbiologist Society of India is a registered not-for-profit academic society dedicated for the advancement of the subject through promotion of its importance in national and international perspective with its central office located at Osmanabad, Maharashtra. Dr. Arvind M. Deshmukh, Ex-Prof.& Head, Dept, of Microbiology, Dr. Babasaheb Ambedkar Marathwada University, Sub Centre, Osmanabad. (M.S.) is the President of the society whereas Dr. Swapna Mukherjee, Associate Professor and Head, Dept. of Microbiology, Dinabandhu Andrews College, Garia, is the acting Secretary of the Central Committee. The Society organizes several activities including national level and international level conferences, workshops, seminars and also discusses prospects and job opportunities in Microbiology. The operation of the society is decentralized through its units located in the different states of the country which ensures better percolation of the objectives of the society specifically through the State Co-ordinators as well as the Student's Units established and operative at different colleges and institutions. The Department of Microbiology at Maulana Azad College established its Students Unit on the has been organizing students' seminars and webinars in collaboration with MBSI, West Bengal Unit spearheaded by State President as well as National Secretary of the Central Council, Dr. Swapna Mukherjee. Following is the yearwise list of activities conducted time to time by the Department of Microbiology, Maulana Azad College.

Swapna Mukherjee

Dr. Swapna Mukherjee
National Secretary
Microbiologists Society, India

Principal
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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2022-23:

Name of the event: e-poster competition to observe World Environment Day organized by Department of Microbiology in collaboration with IQAC and Microbiologist Society of India, west Bengal Chapter:

Number of participants: 22

Short report of the event: This online event was organized by to mark world Environment Day which is observed globally every year on the 5th June to protect and safeguard the interest of our environment through various activities. Due to the threat of the COVID-19 pandemic being still on, an e-poster competition was organized on the theme of this year “Living Sustainably in Harmony with Nature”. 22 entries were received from students which were adjudicated by experts from MSI, WB Chapter and the best three were awarded.

Maulana Azad College, Kolkata

Celebration of World Environment Day (5th June)
e-Poster competition
on
“Living Sustainably in Harmony with Nature”

Organized by the Department of Microbiology and Internal Quality Assurance Cell, Maulana Azad College in collaboration with Microbiologist Society of India, West Bengal

Rules for poster preparation
Posters can be either hand-drawn or made with any software. Participants should ensure originality of the poster. Detection of any plagiarism will automatically disqualify the entry. The poster should be scanned/saved in JPEG or PDF format and submitted using the Google form link. Size of the poster should not exceed 10 MB. Prize will be given to the three best entries. All participants will get e-certificates of participation. Last date of submission is 12th June, 2022 till 6 P.M.

Register and submit your poster here

Principal Maulana Azad College	State President MSI, West Bengal	Head Dept. of Microbiology	Co-ordinator IQAC
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Swapna Mukherjee
Dr. Swapna Mukherjee
National Secretary
Microbiologists Society, India

Principal
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
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Representative entries and sample certificates



Swapna Mukherjee
Dr. Swapna Mukherjee
National Secretary
Microbiologists Society, India

[Signature]
Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
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Life Membership Certificates and other activities for MBSI as Life members

Dr. Arpan Das and Dr. Samudra Prosad Banik are life members of MBSI as per details given in the certificates. In addition, Dr. Samudra Prosad Banik acted as College Level Co-ordinator at the 20th Microbiological Contest and MicrobiOlympiad.



Swapna Mukherjee
Dr. Swapna Mukherjee
National Secretary
Microbiologists Society, India

Principal
Principal
Maulana Azad College
Principal
Maulana Azad College
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Activities under MoU between Maulana Azad College, Kolkata 700013 and Victoria Institution (College), Kolkata 700009

Start date of MoU: 19.06.2023

End date of MoU: Continuing

Duration: 5 years

Sl. No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Students' participation in Add-on course</u> Hands on Training on "Hands-on training on biomedical techniques"	7.08.2023	11.08.2023	Maulana Azad College	19 (5 from Victoria College and 14 from Maulana Azad College)
	<u>Invited lecture under Faculty Exchange Programme</u> Dr. Shampa Dutta Gupta, Associate Professor, Maulana Azad College delivered a lecture on Women's Empowerment in the Orientation Programme organized by Victoria Institution (College) for the B.A. Honours students of Semester I.	8.08.2023	8.08.2023	Victoria College	60


Dr. Maitreyi Ray Kanjilal
Principal
VICTORIA INSTITUTION
(College)

Principal
Victoria Institution


Principal
Maulana Azad College
Kolkata
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Principal
Maulana Azad College



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**Report on the activities under MOU for Academic Collaboration between
Maulana Azad College Kolkata and Victoria College**

A MoU has been signed with Victoria Institution (College) & Maulana Azad College on 19th June, 2023.

PURPOSE:

- To strengthen relationships, understanding and appreciation between two institutions
- To encourage teacher exchange and student exchange in regular academic courses and add-on courses.

Activities under Memorandum of Understanding between Victoria Institution (College), Kolkata and Maulana Azad College, Kolkata

Year of report: 2022-23

Name of the Activity: Hands on training on biomedical techniques

- 1) **HANDS ON TRAINING ON BIOMEDICAL TECHNIQUES** as a part of the Add-on course between Department of Zoology, Maulana Azad College and Dept. of Zoology, Victoria Institution. Students of Asutosh College also participated in the said programme.

Date of the event: 7th August, 2023 to 11th August, 2023

VENUE: Postgraduate Department of Zoology, Maulana Azad College

OBJECTIVE/ PURPOSE: To provide hands on training on biomedical techniques

SPEAKER/S / RESOURCE PERSON/S:

1. Prof. Subir C. Dasgupta
2. Dr. Dipak Kumar Som
3. Dr. Sushanta Roy Karmakar
4. Dr. Sujit Kumar Bhowal
5. Dr. Rajarshi Ghosh
6. Dr. Abhishek Mukherjee
7. Dr. Nabanita Ghosh

Dr. Maitreyi Ray Kanjilal
Principal
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(College)

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TARGET AUDIENCE/ PARTICIPANTS: Students of Undergraduate and Postgraduate Studies from all three institutions

BRIEF REPORT ABOUT THE EVENT/ PROGRAMME:

DAY 1: Welcome address by Prof. Subir Ch. Dasgupta, HOD, Department of Zoology, Maulana Azad College and Dr. Dipak K. Som, IQAC Co-Ordinator, Maulana Azad College followed by Hands on training on “Determination of Some Haematological Parameters” by Dr. Rajarshi Ghosh, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 2: Hands on training on “Effect of pH on Enzyme Activity” by Dr. Abhishek Mukherjee, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

DAY 3: Hands on training on “Mitotic Chromosome Preparation from Bone Marrow of Albino Rat (*Rattus sp.*)” by Dr. Susanta Roy Karmakar, Associate Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.


Day 4: Hands on training on “Restriction endonuclease digestion and demonstration” by Dr. Sujit Kumar Bhowal, Associate Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

Day 5: Hands on training on “RNA isolation from animal tissue using Trizol reagent” by Dr. Nabanita Ghosh, Assistant Professor in Zoology (WBES), Department of Zoology, Maulana Azad College.

EXPECTED OUTCOME: Students have been entrained through this hands-on training so that they can perform these experiments themselves. The knowledge they have gathered in their theoretical classes were demonstrated in front of them for a better understanding.

Number of participants: Students- 24, Faculty members as resource persons-7


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PARTICIPANTS FROM VICTORIA COLLEGE, DEPARTMENT OF ZOOLOGY (SEM VI)

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4	Sudeshna Das	1248	sudeshnadasmishtu@gmail.com
5	Debasmita Ghosh	1260	ghoshdebasmita2002@gmail.com

PARTICIPANTS FROM MAULANA AZAD COLLEGE, DEPT. OF ZOOLOGY (SEM VI)

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4	Asraful Gharami	asrafulgharami2@gmail.com
5	Sohana Sultana	sultanasohana520@gmail.com
6	Srijita Saha	sahasrijita2001@gmail.com
7	Abhisek Patra	abhisekpatra2001@gmail.com
8	Akansha Dutta	akanshadutta557@gmail.com


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10	Shramana Halder	shramanahalder1234@gmail.com
11	Sayak Mallick	sayakmallick0907@gmail.com
12	Taniya Islam	taniyaneha0000@gmail.com
13	Samraggi Chakraborty	mail2samraggichakraborty@gmail.com
14	Deepsikha Mitra	deepsikha.mitra.1996@gmail.com

PARTICIPANTS FROM ASUTOSH COLLEGE, DEPARTMENT OF ZOOLOGY, (SEM VI)

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4	Sharmistha Chell	sharmisthachell9091@gmail.com
5	Shridipta Kar	shridipta13@gmail.com


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Copy of Departmental notice regarding the Add-on course


Post Graduate Department of Zoology
Notice


No Z/Gen/73 Dated: 05.6.2023



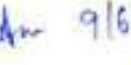
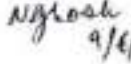
This is to notify that a DC meeting will be held on 9.6.23 at 12.15 pm in the departmental room to discuss the following agenda.

1. Workshop for the session 2022-2023
2. Matters arising

All esteemed colleagues are requested to attend the meeting


 Principal
 Maulana Azad College
 Govt. of West Bengal


 Head
 Department of Zoology
 HEAD
 P.G. Department of Zoology
 Maulana Azad College
 Govt. of West Bengal
 Kolkata -700013

1.  9/6/23
2.  9.6.23
3.  9/6/23
4.  9/6/23
- 5.
- 6.

Maulana Azad College, Kolkata


Dr. Maitreyi Ray Kanjilal
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Photographs from the workshop




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Website: <https://maulanaazadcollegekolkata.ac.in>



2. Invited lecture under faculty exchange programme

Dr. Maitreyi Ray Kanjilal
Principal
VICTORIA INSTITUTION
(College)

Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
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Dr. Shampa Dutta Gupta, Associate Professor, Maulana Azad College delivered a lecture on Women's Empowerment on 8th August, 2023 in the Orientation Programme organized by Victoria Institution (College) for the B.A. Honours students of Semester 1. The newcomers were enlightened by the lecture very much.




Dr. Maitreyi Ray Kanjilal
Principal
VICTORIA INSTITUTION
(College)


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Maulana Azad College
Principal
Maulana Azad College
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Photograph of MoU signing




Dr. Maitreyi Ray Kanjilal
Principal
VICTORIA INSTITUTION
(College)


Principal
Maulana Azad College
Principal
Maulana Azad College
Kolkata
Govt. of West Bengal



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Activities under MoU between Maulana Azad College, Kolkata 700013 and

Vital Waste, Kolkata 700020

Sl No.	Name of activity	Starting date	Completion date	Hosted by	No. of participants
1.	<u>Recycling of Metal waste</u> Maulana Azad College recycled 628 Kgs of metal waste facilitated by Vital Waste	18.03.2024	18.03.2024	Maulana Azad College, Kolkata.	12
2.	<u>Recycling of Paper waste</u> Maulana Azad College recycled 1691 Kgs of paper waste facilitated by Vital Waste	18.03.2024	18.03.2024	Maulana Azad College, Kolkata	11
3.	<u>Recycling of Metal waste</u> Maulana Azad College has recycled 568 Kgs of metal waste facilitated by Vital Waste	27.05.2024	27.05.2024	Maulana Azad College, Kolkata	12
4.	<u>Recycling of Paper waste</u> Maulana Azad College recycled 495 Kgs of paper waste facilitated by Vital Waste equivalent to saving 8 trees	27.05.2024	27.05.2024	Maulana Azad College, Kolkata	12
5.	<u>Recycling of Plastic waste</u> Maulana Azad College recycled 56 kgs of plastic waste facilitated by Vital Waste	27.05.2024	27.05.2024	Maulana Azad College, Kolkata	12
6.	<u>Recycling and channelization of E-waste</u> Maulana Azad College recycled 537 kgs of electronic waste facilitated by Vital Waste	27.05.2024	27.05.2024	Maulana Azad College, Kolkata	10

REDIVVUS RECYCLERS PVT. LTD.

Pearu Guha
Director

Vital waste

[Signature]
Principal

Maulana Azad College

Principal
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**Report on status of MOU signed between Maulana Azad College, Kolkata-13 and
'Vital waste' Redivivus Recyclers Private Limited, Kolkata 700015**

- **DATE of SIGNING THE MOU:** 22.02.2023
- **OBJECTIVE/ PURPOSE:** Efficient environment friendly waste management of the college campus including metal waste (junk unserviceable instruments and furniture), paper waste (very old documents which are no longer required), plastic waste (disposable laboratory consumables), e-waste (old and unserviceable CPUs, monitors, UPS, laptops and other accessories) through training of college support staff about proper waste disposal and timely collection of waste.

Yearwise activities conducted under MoU

1. **Name of the Activity:** Recycling of metal waste

Category of Activity: Waste disposal

Organizing Unit: Maulana Azad College & 'Vital waste' Redivivus Recyclers Private Limited

Date, Time, Duration, Venue: 18.03.2024, 12 noon, 3 hrs, College campus.

No. of staff members from college and Vital waste who facilitated the collection and pick-up of the waste: 12

Brief Description of the activity: On 18th March 2024, Vital Waste facilitated the collection of 628 kg of metal waste from the college chiefly arising from the old unserviceable instruments.

Outcome/impact of the activity: The clearance of junk metal waste freed up a lot of storage space of the college and also ensured that these wastes were recycled in as much environment friendly manner as possible.

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Dumbar



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2. **Name of the Activity:** Recycling of paper waste

Category of Activity: Waste disposal

Organizing Unit: Maulana Azad College & 'Vital waste' Redivivus Recyclers Private Limited

Date, Time, Duration, Venue: 18.03.2024, 3 P.M., 1 hr, College campus.

No. of staff members from college and Vital waste who facilitated the collection and pick-up of the waste: 11

Brief Description of the activity: On 18th March 2024, Vital Waste facilitated the collection of 1691 kg of paper waste from the college from the extremely old documents/ answer scripts which are no longer required.

Outcome/impact of the activity: The clearance of the old documents freed up a lot of storage space of the college and also ensured that these wastes were recycled in as much environment friendly manner as possible. Recycling of this much paper is approximately equal to saving 29 trees.

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3. **Name of the Activity:** Recycling of metal waste

Category of Activity: Waste disposal

Organizing Unit: Maulana Azad College & 'Vital waste' Redivivus Recyclers Private Limited

Date, Time, Duration, Venue: 27.05.2024, 11 A.M. 3 hrs, College campus.

No. of staff members from college and Vital waste who facilitated the collection and pick-up of the waste: 12

Brief Description of the activity: On 27th May, 2024, Vital Waste facilitated the collection of 568 kg of metal waste from the college chiefly arising from the old unserviceable instruments.

Outcome/impact of the activity: The clearance of junk metal waste freed up a lot of storage space of the college and also ensured that these wastes were recycled in as much environment friendly manner as possible.

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REDIVIVUS RECYCLERS PVT. LTD.
Pranav Goel
Director



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Maulana Azad College
Principal
Maulana Azad College
Kolkata
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4. **Name of the Activity:** Recycling of paper waste

Category of Activity: Waste disposal

Organizing Unit: Maulana Azad College & 'Vital waste' Redivivus Recyclers Private Limited

Date, Time, Duration, Venue: 27.05.2024, 2 P.M., 1 hr, College campus.

No. of staff members from college and Vital waste who facilitated the collection and pick-up of the waste: 12

Brief Description of the activity: 27th May, 2024, Vital Waste facilitated the collection of 495 kg of paper waste from the college from the extremely old documents/ answer scripts which are no longer required.

Outcome/impact of the activity: The clearance of the old documents freed up a lot of storage space of the college and also ensured that these wastes were recycled in as much environment friendly manner as possible. Recycling of this much paper is approximately equal to saving 8 trees.

Copy of certificate awarded to college by Vital Waste



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Pranov Goel
Director



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Maulana Azad College
Principal
Maulana Azad College
Kolkata
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Maulana Azad College



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5. **Name of the Activity:** Recycling of plastic waste

Category of Activity: Waste disposal

Organizing Unit: Maulana Azad College & 'Vital waste' Redivivus Recyclers Private Limited

Date, Time, Duration, Venue: 27.05.2024, 3 P.M., 1 hr, College campus.

No. of staff members from college and Vital waste who facilitated the collection and pick-up of the waste: 12

Brief Description of the activity: On 27th May 2024, Vital Waste facilitated the collection of 56 kg of plastic waste from the college generated by the disposable consumables (plasticwares) at the different science laboratories.

Outcome/impact of the activity: Plastic waste has become an alarming menace to the ecosystem especially to the marine life. Kolkata, being a riverside city, needs extra precaution in segregation and disposal of plastic waste since indiscriminate dumping will lead to eventual deposition of these plastic wares to the Hooghly River from where they will be carried away downstream to the Bay of Bengal. Proper segregation of these plasticwares by Vital Waste ensured that these will be recycled in an environment friendly manner.

Copy of certificate awarded to college by Vital Waste



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Best
Dumbar



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Maulana Azad College
Kolkata
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Website: <https://maulanaazadcollegekolkata.ac.in>

6. **Name of the Activity:** Recycling of e-waste

Category of Activity: Waste disposal

Organizing Unit: Maulana Azad College & 'Vital waste' Redivivus Recyclers Private Limited

Date, Time, Duration, Venue: 27.05.2024, 4 P.M., 2 hr, College campus.

No. of staff members from college and Vital waste who facilitated the collection and pick-up of the waste: 12

Brief Description of the activity: On 27th May 2024, Vital Waste facilitated the collection of 537 kg of e-waste from the college in the form of unserviceable computer monitors, CPUs, UPS, printers and other accessories along with few other small instruments.

Outcome/impact of the activity: Electronic devices are concentrated sources of hazardous materials such as lead, mercury, cadmium, and brominated flame retardants. Indiscriminate dumping of these things in landfills or incineration result in the release of these extremely toxic pollutants into the environment posing serious threat to local biodiversity as well as human beings. Vital Waste ensured that these will be recycled in an environment friendly manner avoiding leaching of these harmful chemicals into the environment.

Copy of certificate awarded to college by Vital Waste





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Copy of appreciation certificate awarded to Maulana Azad College for Environmental excellence



[Signature]
Principal
Maulana Azad College
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Kolkata
Govt. of West Bengal

FORM 10
[See rule 19 (1)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1	Sender's Name & Mailing Address (including Phone No. & e-mail)	:	Maulana Azad College 8, Rafi Ahmed Kidwai Rd, Taltala, Kolkata, West Bengal 700013
2	Sender's Authorization No.	:	
3	Manifest Document No.	:	303
4	Transporter's Name & Address (including Phone No. & e-mail)	:	Self
5	Type of Vehicle	:	(Truck/ Tanker/ Special Vehicle)
6	Transporter's Registration No.	:	N/A
7	Vehicle Registration No.	:	WB974208
8	Receiver's Name & Mailing Address (including Phone No. & e-mail)	:	NILAY NARAYAN POLYCHEM LLP Plot D-167(P)No.4&5, Kandra Industrial Area, Govindpur, Dhanbad-828109, Jharkhand.
9	Receiver's Authorization No.	:	JSPCB/HO/RNC/HWM-10052121/2021/23 24/03/2021
10	Waste Description	:	Used Chemicals
11	Total Quantity No. of Containers	:	162 Ltrs.
12	Physical form	:	(Solid/ Semi Solid/Sludge/Oily/Tarry/Shurry/Liquid)
13	Special Handling Instructions & Additional Information	:	Use Personal protection equipments while handling.
14	Sender's Certificate	:	

I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorized, packed, marked, and labeled, and are in all respects in proper condition for transport by road according to applicable national government regulations.

Date : 27.06.2024

Stamp & Signature

15 Transporter Acknowledgement of receipt of wastes.

Date : 27.06.2024

Stamp & Signature

16 Receiver's Certification of Receipt of Hazardous waste and other waste.

Date : 27.06.2024

Stamp & Signature



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TO WHOM IT MAY CONCERN

29.06.2023

This gives me immense pleasure to certify that Dr. Mahua Patra, Associate Professor, Department of Sociology of this college was engaged in collaborative research with Dr. Debasis Sinha, Associate Professor, Dept. of Community Medicine, Rampurhat Medical College and Prof. (Dr.) Palash Das, Professor, Rampurhat Medical College in the period 2022-23. Detailed report of the collaborative research output is enclosed herewith.

I express my sincere gratitude to Dr. Debasis Sinha and Prof. Palash Das for this successful research collaboration.

Principal

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Kolkata
Govt. of West Bengal



International Sociological Association

Certificate of Participation

This is to certify that

Mahua PATRA, Palash DAS and Debasish SINHA

presented the paper

*Patients' Experiences with Telemedicine Treatment System: An in-Depth Study
in Rural West Bengal, India*

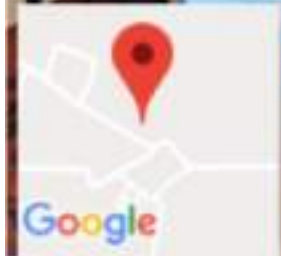
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Universidad Complutense
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Government of West Bengal

Office of The Principal

Rampurhat Government Medical College & Hospital

Rampurhat, Birbhum, West Bengal - 731224

Phone: 03461-255285 / 102; email: prinrampurhatgmch@gmail.com



Memo No: RPHGMCH/

Date:

To Whom It May Concern

Teaching experience of Dr. Debasish Sinha....., now posted as Associate Prof Department of Community Medicine Rampurhat Government Medical College & Hospital, Birbhum, West Bengal as verified from the Service Book of the Employee.

Designation	Department	Institution	From DD/MM/YYYY	To DD/MM/YYYY	Total Experience in year & Month
<u>RMO cum Senior Resident/Tutor/Demonstrator</u>	<u>PMR</u>	<u>R.G.Kar MC</u>	<u>04.03.1995</u>	<u>28.04.2010</u>	<u>16 yr 10 mo</u>
	<u>Community Med</u>	<u>NBMC</u>	<u>29.04.2010</u>	<u>7.02.2011</u>	<u>9 months</u>
		<u>NBMC</u>	<u>10.02.2011</u>	<u>23.02.2012</u>	
<u>Assistant Professor</u>	<u>Community Medicine</u>	<u>MSD-MCH</u>	<u>24.02.2012</u>	<u>18.06.2015</u>	<u>7 years & 7 months</u>
		<u>IPGME & R</u>	<u>19.06.2015</u>	<u>11.09.2018</u>	
<u>Associate Professor</u>	<u>Community Medicine</u> <u>Rampurhat G.M.C.H</u>	<u>Rph.G.M.C.H</u>	<u>12.09.2018</u>	<u>Continuity</u>	<u>2 year 6 months</u>
<u>Professor</u>					

Kelani Saha

Signature of the Faculty

[Signature]

Signature of Principal with Office Seal



Prof. (Dr.) Palash Das



**From the Desk of the MSVP,
Rampurhat Govt. Medical College & Hospital**

There is a handful of Indians unaware of the name of Rampurhat or Tarapith in West Bengal of India, for Tarapith and Rampurhat, so to say, is reciprocal. It is not an upstart township, rather this town has a bag of rich historical resources since the ancient reigns of Mauryan, Guptan and Pala dynasties. This holy place was a pasture land of Jain, Buddhist and Lama Monks and pilgrims. Today's Rampurhat town has the status of the Sub-Divisional headquarter of the District of Birbhum of the State of West Bengal in India. Pilgrims and culture hunts from all over India and abroad stream into this location round through the year for the quest of spiritual and educational realization. Tarapith, Nalateshwari, Kankalitala, Fullora and uncountable Hindu temples are scattered around this township. Moreover, the renowned educational Rith of the world, Viswabhacati Shantiniketan of Rabindranath Tagore, a handshake away, has her hands waving




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Bioresource Technology Reports

Volume 26, June 2024, 101830

Degradation and molecular docking of Curli to scout aggregation complexion

Nisha Bhat ^a, Tirthankar Roy ^a, Shritoma Sengupta ^b, Maitree Bhattacharyya ^c  ,
Samudra Prosad Banik ^d, Pijush Basak ^c  

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- ^b Dept. of Biochemistry, University of Calcutta, Kolkata 700019, West Bengal, India
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 What do these dates mean?



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Highlights

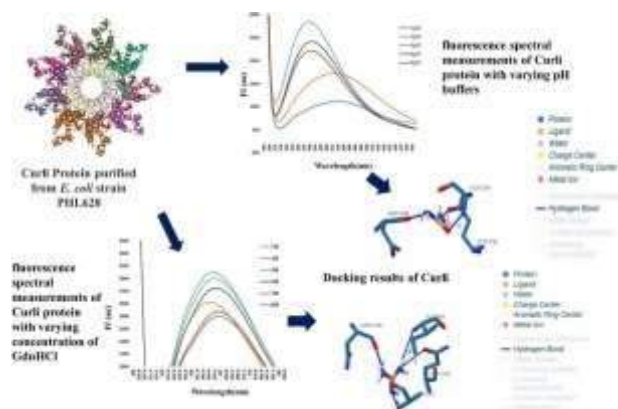
- *E. coli* PHL628 capable of producing an extracellular protein fibril Curli

- Intrinsic fluorescence variation of Curli due to effect of pH, Urea and GdnHCl
- Changing dynamics of Curli by UV-absorption, fluorescence anisotropic measurements
- Extrinsic fluorescence variation by ANS, representing time interval of denaturation
- Molecular docking revealed the interaction of Curli with Urea and GdnHCl.

Abstract

Curli, an extracellular protein fibril produced by certain gram-negative enteric bacteria, is responsible for neuro-degenerative diseases due to spontaneous misfolding of soluble proteins. This study investigates the effect of denaturing agents (Urea, Guanidine Hydrochloride) and varying pH (2–11) on the conformation of Curli protein, isolated from *E. coli* PHL628, due to changes in the external environment. The study focuses on the changing dynamics of the protein using intrinsic fluorescence property, UV-absorption, fluorescence anisotropic measurements, and extrinsic fluorescence property with the help of interaction with 1-anilinonaphthalene-8-sulphonate (ANS). The data showed that the absorption maximum (λ_{\max}) of protein was altered in variation of denaturant concentration and buffer pH. Molecular docking results revealed the interaction of Curli with Urea and GdnHCl, by comparing structural changes. This study determines how denaturants and changes in the external environment cause denaturation or modification in the folded structure of Curli protein and provides insight into binding sites of Curli with denaturants.

Graphical abstract



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Introduction

Protein or peptide misfolding is considered to be the precursor for the generation of amyloid fibrils, which are involved in causing different neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease (PD), Huntington's disease (Perov et al., 2019; Das et al., 2020; Stafshede, 2021). X-ray fiber diffraction detected that the amyloid fibrils are typically 7–13 nm in diameter and possess cross- β structure, in which β -strands are arranged in such a way that they are perpendicular to the fibril axis. Fibrillar morphology, cross- β structure, and characteristic tinctorial properties of a protein are widely considered to be the hallmarks of protein aggregation leading to amyloid formation (Stafshede, 2021). Subsequently, recent studies have shown the prevalence of functional amyloids in some bacteria and humans as well. These functional bacterial amyloids which are produced extracellularly, have distinct functional purposes in-vivo. The functional properties shown by these amyloids ranges from virulence during infection and anti-microbial resistance (AMR) property, acting as structural scaffolds in bacterial biofilms to storage of peptide hormones (Jackson and Hewitt, 2017; Franco et al., 2023; Richter-Dahlfors et al., 2023).

Curli from *E.coli* which serves potentially in biofilm formation, was the first functional amyloid to be discovered and well characterized (Chiti and Dobson, 2017). These extracellular protein fibers are also known to be produced by gram negative enteric bacteria including *Salmonella* species and *Enterobacter* species. Though curli plays key role in *E. coli* biofilms, yet the curliated cells are localized to air-colony interface of static liquid cultures (Dueholm et al., 2011). Studies showed that curli-producing *E. coli* when fed, promoted the increase in alpha synuclein aggregation (Perov et al., 2019). These amyloid fibrils are highly stable as are resistant to degradation by proteases as well as denaturation by detergents

such as SDS (sodium dodecyl sulphate). Hence it is subjected to harsh treatment with formic acid or hexafluoroisopropanol, which depolarizes and resolves the different subunits of Curli amyloid (Evans and Chapman, 2013). A very dedicated secretion pathway is responsible for the regulation and secretion of the curli fibers, known as the nucleation-precipitation mechanism or the type VIII secretion system. In *E. coli*, distinctly transcribing operons (csgBAC and csgDEFG) encodes seven curli-specific genes (csgA, csgB, csgC, csgD, csgE, csgF, csgG). The major and minor subunits, CsgA and CsgB respectively are encoded by csgBA operon, in the ratio 20:1 (Akbej and Andreasen, 2022). The proteins which are essential for the regulation and transportation of the CsgA and CsgB subunits to the cell surface are encoded by the csgDEFG operon. CsgA and CsgB subunits are homologs, sharing 50% sequence identity and consisting of imperfect repeats of amino acids (~20 amino acids). The major subunit, CsgA comprises of glutamine and asparagine residues, essential for amyloid formation. The fibrillation of CsgA, which is secreted as soluble unsaturated protein is nucleated by CsgB. CsgC acts as a negative regulator and plays the role of a chaperone to neutralize premature amyloidosis of curli subunits (Gerven et al., 2015).

Any structural changes in the conformation of a protein affects tryptophan, tyrosine residues which is reflected in the intrinsic fluorescence property. This property of a protein originates due to electronic transitions from aromatic amino acids (Tryptophan, Phenylalanine and Tyrosine) on exposure to primary energy source when the displaced electron reaches to excited state and again drops down to ground state (Millan et al., 2020; Rodrigues et al., 2023). The aromatic amino acid residues when excited at a particular wavelength undergo $\pi-\pi^*$ transitions releasing photons which emits fluorescence. The fluorescence emission maximum is observed to shift towards longer wavelength than that of excitation maximum ($\lambda_{em} > \lambda_{ex}$). This shift is known as Stokes Shift and occurs due to vibrational relaxation of the excited electrons to lowest energy level (Gehlen, 2020). An interesting phenomenon observed in protein fluorescence emission is the shifting of the emission maxima towards smaller wavelength or larger wavelength, when introduced to conformational changes which affects the nano-environment of the intrinsic fluorophore leading to alterations in intermolecular interactions (Lakowicz, 1999; Meech, 2009; Lischka et al., 2018; Rodrigues et al., 2023). If the emission maximum wavelength (λ_{em}) shifts to higher wavelength, redshift is observed and if the wavelength (λ_{em}) shifts towards smaller wavelength, a blueshift is observed (Lakowicz, 1999). Curli being a fibrous protein, several studies have shown that addition of water can affect the conformational stability of globular proteins whereas fibrous proteins remain intact. Urea, guanidine hydrochloride (GdnHCl) and other related compounds are known to act as denaturing agent, which also helps to determine Gibbs free energy change signifying protein stability (Biswas et al., 2018; Rodrigues et al., 2023). Studies have shown that the denaturation property of urea and

GdnHCl is due to their ability to disrupt hydrogen bonds and hydrophobic interactions between as well as within the protein molecules destroying the tertiary structure, and might also destroy secondary structure when used at higher concentration. In some case the denatured proteins are found to get back to their native structure when denaturing chaotropic agents are removed (Basak et al., 2015; Guckeisen et al., 2021). It is interestingly noted that compared to urea, GdnHCl is more likely to manipulate the hydrophobic and hydrophilic interaction among the surface residues, making the protein more soluble (Basak et al., 2015). Structural heterogeneity and interchanging dynamics of the unfolded protein chain due to denaturation, requires a detailed description about the structures and dynamics of the folded and functional protein as well as unfolded forms. Intrinsic molecular fluorescence methods are ideally used for the study of denatured structures as it helps in independent analysis of fluorescence intensities from the intrinsic molecules (tyrosine, tryptophan) from different unfolded conformations (Bennion and Daggett, 2003). Studying the action of pH and denaturing agents on a protein structure is very crucial to understand the complex relationship between protein structure, function and the surrounding environment. Changes in pH influences protein folding to a larger extent and can influence protein folding and misfolding which can lead to neurodegenerative diseases. Moreover, the stability of protein is often pH-dependent due to hydrogen bonding, electrostatic interactions and hydrogen bonding, resulting into denaturation or protein folding.

The predication of predominant binding site(s) of a ligand with a protein gives a detailed information about how a protein interacts with a ligand. CB-Dock is a web server for cavity detection. This protein-ligand docking method performs blind docking on the entire protein surface to find the energetically favourable binding between the protein and ligand. Docking method to predicts specific binding sites of a given protein and calculates the centres and sizes and performs docking using the popular docking program Autodock Vina. This method enhances the docking accuracy and has a success rate of ~70% (Liu et al., 2020).

In this study we have studied the dynamics and conformational changes of the protein with changes in environment by altering pH and addition of denaturants such as Urea and GdnHCl. Urea and GdnHCl being the most commonly used denaturants due to their efficiency to break hydrogen bonds as well as hydrophobic interactions were used to study protein unfolding and stability. Studies were carried out with the help of steady-state fluorescence, anisotropic measurements and UV absorption measurement and the variations in their fluorescence were examined with respect to different concentrations and time interval. Further, to compare the sites of interaction of Urea and GdnHCl molecular docking was performed with the help of CB-Dock.

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Section snippets

Chemicals

Yeast extract-Casamino acid (YESCA) broth and Kanamycin used for the growth of *E. coli* PHL628 was purchased from Himedia, India and Sigma-Aldrich, USA respectively. Urea and GdnHCl were obtained from MERCK, India and SRL, India respectively. 8-anilinonaphthalene-1-sulfonic acid (ANS) was purchased from Sigma, USA and Bovine Serum Albumin (BSA) and Bradford reagent used in Bradford method was obtained from TM Media, India and Himedia, India respectively. ...

Purification of curli protein

E. coli PHL628 was grown in YESCA broth ...

Measurements of the steady-state with respect to pH and denaturing agents

Fluorescence intensities were measured to assess the changes in protein conformation for both varying pH and denaturing agents, by exciting samples at 295nm and measuring emission spectra from 300nm–500nm. The change of pH showed a significant shift in emission peak from acidic to basic condition. Observed fluorescence data indicates maximum fluorescence intensity at pH6 with emission maxima at 348nm. From pH3 (λ_{em} 377.2nm) to pH6 (λ_{em} - 347.2nm), wavelength shift (blue shift) of 30nm ...

Conclusions

Denaturing agents and varying pH are known to have adverse effects on the size and conformation of native protein. This study showed the effect of pH and denaturing agents like Urea and GdnHCl on Curli protein, where the intrinsic fluorescence intensity of the

protein increases or decreases with respect to addition of the denaturing agents and changes in buffer pH. Fluorescence intensity as well as the absorption spectra was observed to be maximum at acidic pH along with shift (blueshift) in ...

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Compliance with ethical standards

This article does not contain any studies with human participants performed by any of the authors. ...

CRedit authorship contribution statement

Nisha Bhat: Writing – original draft, Validation, Investigation, Data curation. **Tirthankar Roy:** Writing – review & editing, Investigation, Data curation. **Shritoma Sengupta:** Writing – review & editing, Validation, Formal analysis, Data curation. **Maitree Bhattacharyya:** Supervision, Resources, Project administration, Conceptualization. **Samudra Prosad Banik:** Visualization, Validation, Resources, Conceptualization. **Pijush Basak:** Writing – review & editing, Supervision, Project administration, Data ...

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. ...

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