Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
Formerly College Dupleix
Strand Road, Chandannagar, Hooghly, West Bengal, India, Pin-712136
Website:www.chandernagorecollege.ac.inMail:office@chandernagorecollege.ac.in
Mob:91-7439603177,Tel:91-33-26835290
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution

ANNUAL QUALITY ASSURANCE REPORT (AQAR): 2022-23

Criterion5-Student Support and Progression

Key Indicator-5.1 Student Support

5.1.3. Capacity Development and Skills Enhancement Activities

1. Soft Skills:

List of Soft Skill Enhancement activities, organized by the Chandernagore College with supporting documents are given below-

Sl. No.	Name of the Capability Development and Skill Enhancement Programme	Period (from Date- to Date)	Number of Students Enrolled	Name of the Agencies/Experts Involved with Contact Details (if any)	Page No.
1.	Special Class on Career Counseling & Soft Skill Development Programme for the students of UG Semester-I, B. A (History Honours) & B.Sc. (Pure & Bio-General) of Chandernagore College for the Academic Session: 2022-2023	12.04.2023	56	George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , Howrah - 711204	3
2.	Students' Seminar by the Students of Environmental Science Department	29.03.2023	18	Students of Environmental Science Department, Chandernagore College. Chandannagar, Hoogly- 712136	17
3.	Special Class on Career Counseling & Soft Skill Development Programme for the students of UG Semester-IV B.Com (General) & B.Sc. (General) of Chandernagore College for the academic session: 2022-2023	21.03.2023	84	George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , Howrah - 711204	24
4.	Student's Seminar & Zero Discrimination Day Awareness Programme	01.03.2023	92	Malay Das, Associate Professor Department of Philosophy, Chandernagore College and Anipa Bhattacharya, Student Semester VI Honours Chandernagore College	37
5.	Student Seminar by the Students of Department of Botany	28.02.2023	11	Semester VI Honours Student, Department of Botany, Chandernagore College, Chandannagar, Hoogly- 712136	42
6.	Special Class on Career Counseling & Soft Skill Development Programme for the students of UG Semester-VI B. Com (General) &	21.02.2023	65	George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , Howrah - 711204	49

	B.Sc. (General) of Chandernagore College for the academic session: 2022-2023				
7.	E-Wall, Wall Magazines and other Digital Creations' Repositories of Chandernagore College	June 2018-June 2023	Students of different departments	Students of different academic departments, Chandernagore College, Chandannagar, Hoogly-712136	61

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ACTIVITY: **SPECIAL CLASS ON CAREER COUNSELING & SOFT SKILL DEVELOPMENT FOR THE STUDENTS OF UG SEMESTER-I B.A. (HISTORY HONOURS) & B.SC. (PURE AND BIO-GENERAL) OF CHANDERNAGORE COLLEGEFOR THE ACADEMIC SESSION: 2022-2023**

Programme category: Capacity Building Programme & Skill Enhancement Courses for the students

Collaborating Organization: GEORGE TELEGRAPH TRAINING INSTITUTE

Topic of Discussion: **CAREER COUNSELING & SOFT SKILL DEVELOPMENT**

Date and time Schedule: 12.04.2023 (2 PM- 3 PM)

Venue: Charu Chandra Roy Memorial Hall, First Floor, Administrative Building, Main Campus, Chandernagore College.

Resource Persons: EXPERTS OF GEORGE TELEGRAPH TRAINING INSTITUTE

Participants: 56

OBJECTIVE:

- The programme will provide an overview of the different types and basic eligibility criteria of jobs available in the today's market for the students studying in the basic sciences& commerce streams of general education.
- The programme will provide an exposure to the students on the need and importance of learning various types of soft skill trainings needed for accomplishing success in jobs, business and in other services through maintaining healthy relationships with coworkers and customers, via cooperation and communication within the workplace and trust among colleagues and customers.
- The programme will also guide the students to learn the required soft skill and aptitude needed for improving their academic as well as overall competence

for championing different competitive examinations/interviews in the near future.

OUTCOME:

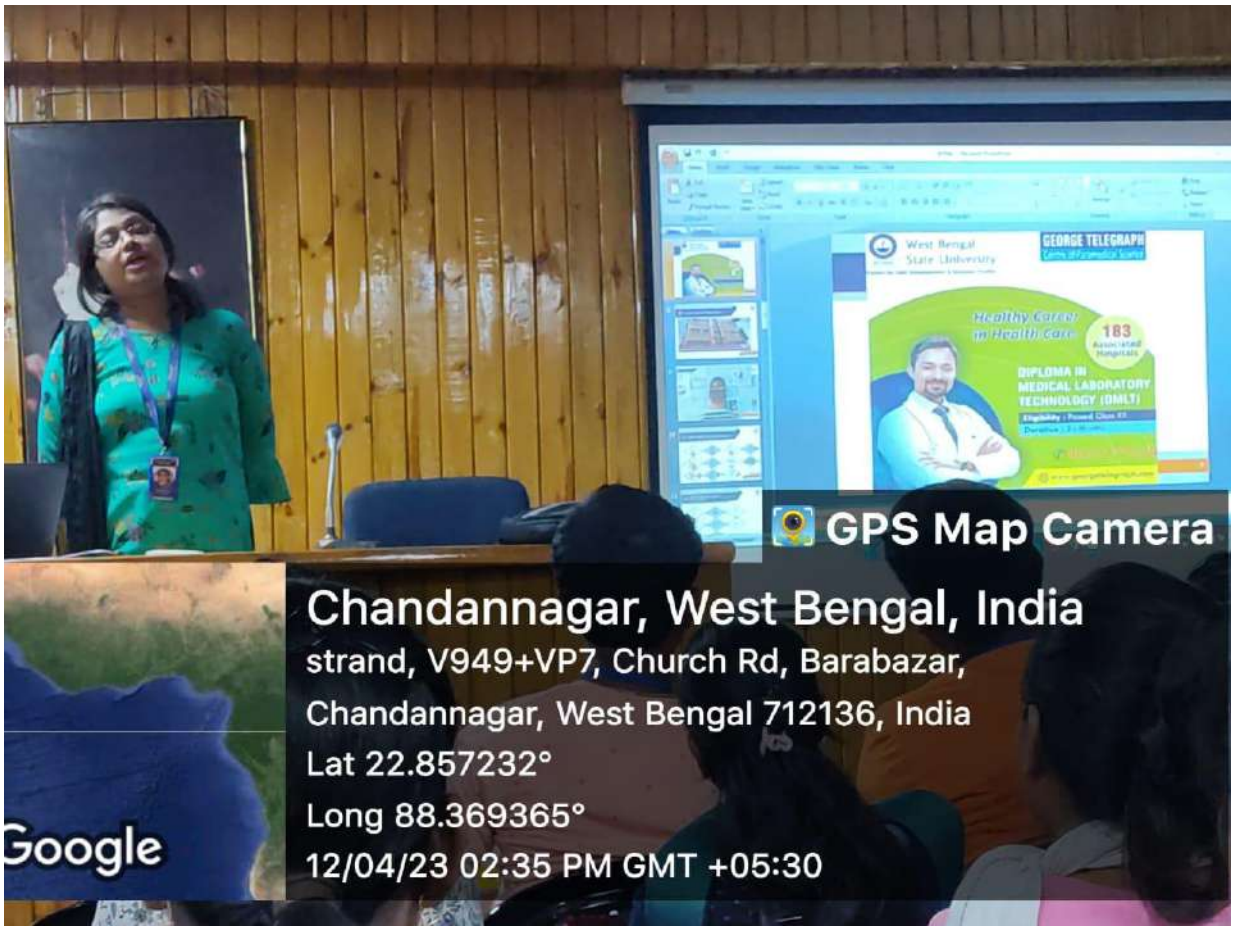
- ✓ The students were very enthusiastic and certainly found the topic of discussion very striking and pertinent for them.
- ✓ The experts guided the students about the basic approach and strategies that they should opt while preparing for different competitive examinations& interviews to achieve success in career building.
- ✓ Through different illustrations and positive deliberations, the students learnt the way of answering questions within minimum time-frame and in logical approachwith betterrankings in different forthcoming competitiveexaminations.

Principal
Chandernagore College

IQAC, Coordinator
Chandernagore College

Captured Moments of 'knowledge-sharing'classes taken by the Resource Persons of GEORGE TELEGRAPH TRAINING INSTITUTEwith the students of Chandernagore College


GPS Map Camera
Chandannagar, West Bengal, India
strand, V949+VP7, Church Rd, Barabazar,
Chandannagar, West Bengal 712136, India
Lat 22.857232°
Long 88.369365°
12/04/23 02:32 PM GMT +05:30
Google


GPS Map Camera
Chandannagar, West Bengal, India
strand, V949+VP7, Church Rd, Barabazar,
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Lat 22.857232°
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12/04/23 02:35 PM GMT +05:30
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Chandernagore College

Estd. 1862

Strand Road, Barabazar, P.O. Chandernagore

Dist.Hooghly,West Bengal

NOTICE

No.564 **10/04/2023**

Taking into account the forthcoming University Examination of UG-CBCS Semester-I, the Skill Enhancement and Career Counseling programme for the UG Semester-I students of following Departments of Chandernagore College has been rescheduled as per the following schedule:

VENUE: CHARU CHANDRA ROY MEMORIAL HALL, MAIN CAMPUS, FIRST FLOOR, ADMINISTRATIVE BUILDING Date: 12.04.2023 (Wednesday)	
Time: **12:30 PM-1.30 PM**	**Time:** **2:00 PM-3:00PM**
DEPARTMENTS: POLITICAL SCIENCE (HONS.) SOCIOLOGY (HONS.) **TOPIC: GUIDANCE FOR COMPETITIVE EXAMINATIONS** **COLLABORATING ORGANIZATION:** **GEORGE TELEGRAPH TRAINING INSTITUTE**	**DEPARTMENTS:** HISTORY (HONS.) B.SC. (PURE GEN.+ BIO-GEN.) **TOPIC: CAREER COUNSELING & SOFT SKILL DEVELOPMENT PROGRAMME** **COLLABORATING ORGANIZATION:** **GEORGE TELEGRAPH TRAINING INSTITUTE**

All the concerned students are instructed to attend the following programme positively.

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Coordinator, IQAC
Chandernagore College

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FLYER OF THE PROGRAMME

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ATTENDANCE OF THE PROGRAMME

CHANDERNAGORE COLLEGE

Name of the Event GUIDANCE FOR COMPETITIVE EXAMS
Name of the Department HISTORY
DATE 12.04.23 TIME: 12.00PM TO 1:00 PM

SLNO	ROLL NO	NAME OF THE STUDENT	SIGNATURE
1	22-BA-HISA-0026	AJOY DEY	Ajoy Dey
2	22-BA-HISA-0036	ANKITA BASAK	Ankita Basak.
3	22-BA-HISA-0035	ANKITA DAS	Ankita Das
4	22-BA-HISA-0049	ANUSHREE RABIDAS	Anushree Rabi das
5	22-BA-HISA-0027	ARGHYAJYOTI SANTRA	
6	22-BA-HISA-0010	DIPTIMA CHAKRABARTY	Diptima Chakrabarty
7	22-BA-HISA-0043	FARIDA YASMIN	Farida Yasmin
8	22-BA-HISA-0001	GEETASHRI ROY	Geetashri Roy
9	22-BA-HISA-0044	ISHIKA JHA	Ishika Jha.
10	22-BA-HISA-0012	JEET MALLICK	Jeet Mallick
11	22-BA-HISA-0050	LALITA SARDAR	Lalita Sardar
12	22-BA-HISA-0042	MANTU SEN	Mantu sen
13	22-BA-HISA-0016	MD MIZANUR RAHAMAN	Md. Mizanur Rahaman.
14	22-BA-HISA-0052	MONOJIT MURMU	Monojit Murmu
15	22-BA-HISA-0021	MOUMITA MALO	moumita malo
16	22-BA-HISA-0045	NEHA GHOSH	Neha Ghosh
17	22-BA-HISA-0057	NOOR JABI	
18	22-BA-HISA-0023	OM BARIK	Om Barik
19	22-BA-HISA-0060	PAROMITA SARKAR	Paromita Sarkar
20	22-BA-HISA-0038	PAYEL BISWAS	Payel Biswas
21	22-BA-HISA-0018	PRIYA GHOSH	Priya Ghosh
22	22-BA-HISA-0002	PRIYA SAHANI	Priya Sahani.
23	22-BA-HISA-0020	RAJANI DAS	Rajani Das.
24	22-BA-HISA-0025	RINKY DAS	Rinky Das
25	22-BA-HISA-0022	ROHAN SAHA	Rohan Saha
26	22-BA-HISA-0033	RUPSA SIL	Rupsa Sil
27	22-BA-HISA-0006	SANDIPTO PAL	Sandipto Pal
28	22-BA-HISA-0053	SANGITA SINGHA	Sangita Singha.
29	22-BA-HISA-0011	SEKH SAHID AHAMED	Sekh Sahid Ahamed
30	22-BA-HISA-0061	SHANKHADEEP ACHARYA	Shankhadeep Acharya
31	22-BA-HISA-0056	SHOUVIK MAZUMDAR	Shouvik Mazumdar
32	22-BA-HISA-0032	SNEHA BANERJEE	Sneha Banerjee
33	22-BA-HISA-0059	SNEHA GHOSH	Sneha Ghosh
34	22-BA-HISA-0039	SNEHA NAYAK	Sneha Nayak
35	22-BA-HISA-0030	SOUMITA SARKAR	Soumita Sarkar
36	22-BA-HISA-0051	SOUMYADIP DAS	Soumyadip Das
37	22-BA-HISA-0055	SRIJANI DAS	Srijani Das
38	22-BA-HISA-0047	SUBHAM ADHIKARI	Subham Adhikari
39	22-BA-HISA-0058	SUBRATA SEN	Subrata Sen
40	22-BA-HISA-0017	SUNANDA BEPARI	
41	22-BA-HISA-0037	SURAJIT BAG	Surajit Bag
42	22-BA-HISA-0003	SURANGANA PAUL	Suranganna Paul
43	22-BA-HISA-0046	SUSMITA BARAL	Susmita Baral
44	22-BA-HISA-0005	SUSMITA DAS	

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45	22-BA-HISA-0024	SWASTIKA DAS	
46	22-BA-HISA-0013	TITLI BISWAS	Titli Biswas

Signature of Faculty 12.4.23.

Signature of Resource Person

Sujit Chatterjee
12/4/23

Beauty Banerjee
12/4/23.

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of the Event — CARRER COUNSELLING & SOFT SKILL
e of the Department — BSc PURE GEN & BIO GEN
TE 12.04.23 — TIME: 2.00PM TO 3.00 PM

SLNO	ROLL NO	NAME OF THE STUDENT	SIGNATURE
1	22-BSCGENBIO-0010	RIKTH GHOSAL	Rikth Ghosal
2	22-BSCGENBIO-0012	NILOY HALDER	Niloy Halder
3	22-BSCGENBIO-0014	PRIYA CHOWDHURY	Priya Chowdhury
4	22-BSCGENBIO-0016	BIBAKE BHATTACHARJEE	
5	22-BSCGENBIO-0018	KUSUM GHOSH	
6	22-BSCGENBIO-0022	MADHABI ROY	Madhabi Roy
7	22-BSCGENBIO-0024	ANANTA DAS	Ananta Das
8	22-BSCGENBIO-0025	RIVA PAL	
9	22-BSCGENBIO-0029	CHANDAN BHUIN	Chandan Bhuin
10	22-BSCGENBIO-0031	SUBHRIN CHATTERJEE	Subhrin Chatterjee
11	22-BSCGENPURE-0001	RAUNAK SEN	Raunak
12	22-BSCGENPURE-0010	SOUVIK DAS	Souvik Das
13	22-BSCGENPURE-0014	ROHIT BAULDAS	Rohit Bauldas
14	22-BSCGENPURE-0018	SANJUKTA SEN	Sanjukta Sen
15	22-BSCGENPURE-0019	RAJ DAS	Raj Das
16	22-BSCGENPURE-0021	ASHMITA BARIK	Ashmita Barik
17	22-BSCGENPURE-0022	SRIJANDEEP DAS	Srijandeep Das
18	22-BSCGENPURE-0023	PAWAN SHAW	Pawan Shaw

CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES

on

CAREER COUNSELING & SOFT SKILL DEVELOPMENT

Organized by

CHANDERNAGORE COLLEGE

IN COLLABORATION WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

This is to certify that Sri/Smt. AJOY DEY, B.A. SEMESTER I, HISTORY HONOURS STUDENT of Chandernagore College has participated in the **SPECIAL CLASSES ON CAREER COUNSELING & SOFT SKILL DEVELOPMENT** on **12.04.2023** as a part of **CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES at Chandernagore College**.

Principal
Chandernagore College

In-Charge
George Telegraph Training Institute

CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES

on

CAREER COUNSELING & SOFT SKILL DEVELOPMENT

Organized by

CHANDERNAGORE COLLEGE

IN COLLABORATION WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

This is to certify that Sri/Smt. ANKITA BASAK, B.A. SEMESTER I, HISTORY HONOURS STUDENT of Chandernagore College has participated in the **SPECIAL CLASSES ON CAREER COUNSELING & SOFT SKILL DEVELOPMENT** on **12.04.2023** as a part of **CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES at Chandernagore College**.

Principal
Chandernagore College

In-Charge
George Telegraph Training Institute

पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL 69AB 259399

MEMORANDUM OF UNDERSTANDING (MoU)

This MoU is being executed between **Chandernagore College, Strand Road, Chandannagore, Dist- Hooghly, West Bengal, Pin – 712136** affiliated to The University of Burdwan & **The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , Howrah - 711204**

I. Deliverables of The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah:

The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah will conduct short-term training details for the students of your esteemed college as follows –

Course	TGTTI Suggested Course Name	Duration in Months	Eligibility criteria if any	TGTTI Suggested Course fees for University/ College/ Institute	University/ college share	**Net Course Fee ****	Minimum number of students / candidates required for running the course in each Batch
BA 1st, 2nd, 3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates

	Exam Course						
BCOM 1st , 2nd ,3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative Exam Course	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates
	Tally Prime and TDS Offline & Online (with Tally Certification)	70 Hours	HS Pass	4,800.00	480.00	**4,320.00**	40 Candidates
BSC 1st , 2nd, 3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
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	Combind Competative Exaam Course	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates

** Since Chandernagore College is not accepting any share from George Telegraph Training Institute for the conducted courses, the registered students will be exempted from the Original Course fees of GTTI and they will be required only to pay as per the "Net Course Fee" structure furnished for the above registered courses.

II. Deliverables of Chandannagar College:

1. Cooperation to conduct programs on mutually decided date, time and place.
2. Access to the students at Chandernagore College to motivate and interact with them relating to job opportunities and relevant trainings.
3. Provide necessary infrastructure to conduct interactive sessions with the students at Chandernagore College.

IV. Financial arrangements:

a. No financial commitment is required / involved with Chandernagore College to execute the terms and conditions of the MoU.

b. The George Telegraph Training Institute will charge course fees (Onetime Payment) for the training programme from the registered students as provided in the above table.

c. Since Chandernagore College is not accepting any share from George Telegraph Training

19.09.22

19.9.22

Institute for the conducted courses, the registered students will be exempted from the Original Course fees of GTTI and they will be required only to pay as per the "Net Course Fee" structure furnished above for the registered courses

V. Terms and conditions:

- It is mutually understood and agreed by and between Chandernagore College and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , that the MoU will remain effective for 3 (Three) years. The MoU may be extended or revised after every 3 (Three) years on mutual discussion between the two Institutes viz. Chandernagore College, and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah. Awareness and Seminars would be conducted as and when required, either at Chandernagore College, Chandannagar or The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah or both places, on the basis of mutual consent. The MoU may be extended or revised after every 3 (Three) years on mutual discussion between the two Institutes viz. Chandernagore College, and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah.
- This MoU shall be governed and construed according to the laws of the country for each participating party. Any dispute will jointly be resolved involving the Principal of Chandernagore College and the The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah, in a spirit of independence, mutual respect, and shared responsibility.
- The MoU may be terminated by either party after giving a notice of six months (180 days) provided that this clause will be operative only if either party violates the terms of MoU or if the parties feel that no useful purpose would be served by further continuing it either due to change in circumstances or change in constituting parties.

VI. Confidentiality:

Both the parties shall maintain in confidence and safeguard all information that the each party may come to know as a result of this Agreement.

XI. Entire Agreement - Execution and Modification

This Agreement wholly cancels, terminates and supersedes any and all previous agreements, negotiations, commitments and writings between the Parties in connection with the subject matter of this Agreement.

19.09.22

Principal
Chandernagore College

Principal
Chandernagore College
Chandernagore

19.9.22

Jt. Director (Operations)
The George Telegraph Training Institute,
A: 1/3, Belur Road, Liluah
Howrah - 711204

Date:
Place: Chandannagar, Hooghly

Witness
1: 19.09.2022
2: 19.09.2022.

Witness:
1: 19.9.22
2: 19.9.22.

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Activity Report: Students' Seminar was conducted at the Dept. of Environmental Science, Main Campus, Chandernagore College on 29th March, 2023.

Programme category: Soft Skill Development.

Date: 29.03.2023

Venue: Department of Environmental Science, Chandernagore College.

Participants: 18

OBJECTIVE:

- To train the students for delivering lectures by using Information and Communication Technology.
- To motivate students to communicate in English language.

OUTCOME:

- UG CBCS Semester students (SEM-II, IV, VI) of Environmental Science (Hons.) were actively participated in the above mentioned programme.
- Students of Semester – IV & VI of Environmental Science (Hons.) were presented their PowerPoint Presentation into three groups on the following topics:

  (i) Human Wildlife Coexistence

  (ii) Hydroponic Agriculture

  (iii) 'Is India sinking'?

The above mentioned event was supervised by Dr Rituparna Sarkar, State Aided College Teacher (SACT-I), Dept. of Environmental Science, Chandernagore College.

Principal
Chandernagore College

IQAC, Coordinator
Chandernagore College

Captured Moments of Students' Seminar

Principal

Chandernagore College

Principal

Chandernagore College

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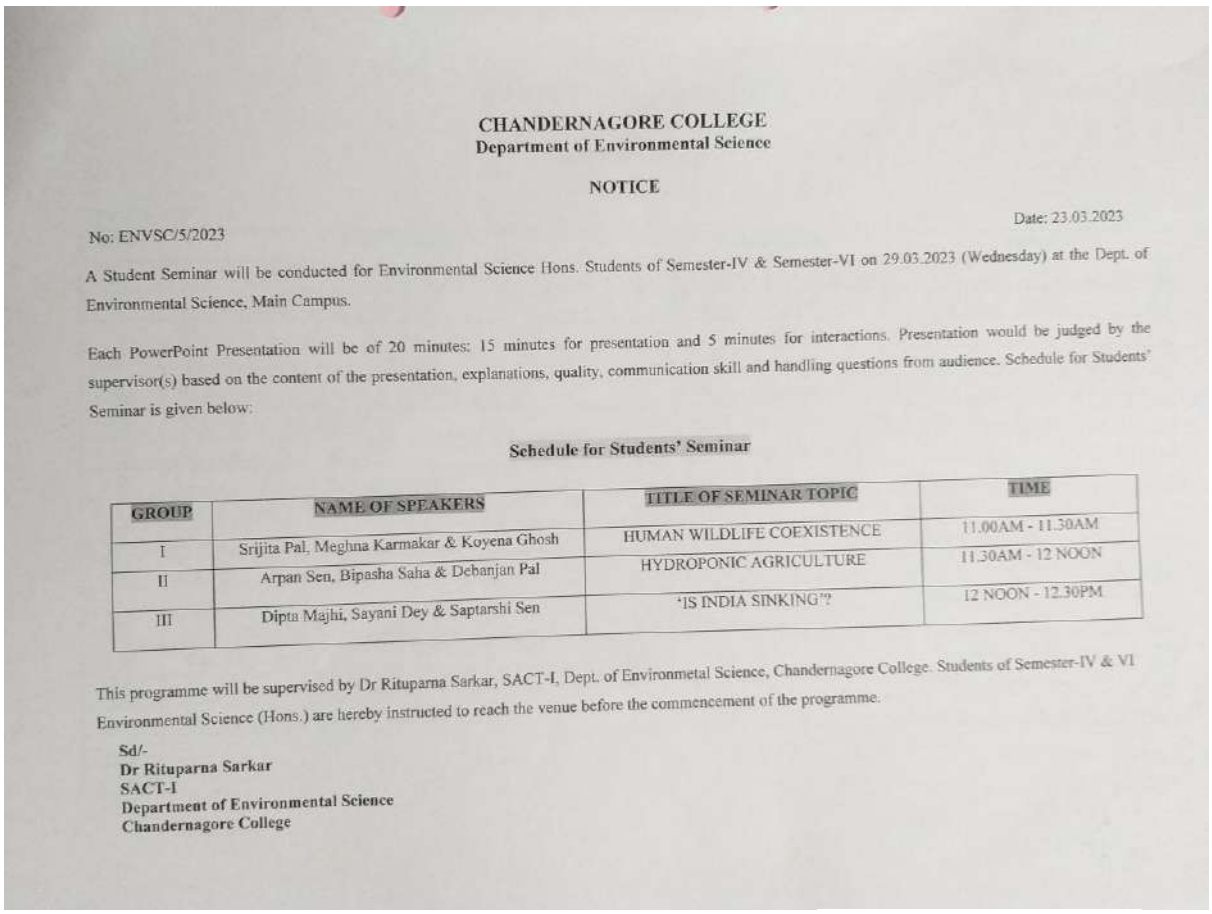

CHANDERNAGORE COLLEGE
Department of Environmental Science

NOTICE

No: ENVSC/5/2023 Date: 23.03.2023

A Student Seminar will be conducted for Environmental Science Hons. Students of Semester-IV & Semester-VI on 29.03.2023 (Wednesday) at the Dept. of Environmental Science, Main Campus.

Each PowerPoint Presentation will be of 20 minutes: 15 minutes for presentation and 5 minutes for interactions. Presentation would be judged by the supervisor(s) based on the content of the presentation, explanations, quality, communication skill and handling questions from audience. Schedule for Students' Seminar is given below:

Schedule for Students' Seminar

GROUP	NAME OF SPEAKERS	TITLE OF SEMINAR TOPIC	TIME
I	Srijita Pal, Meghna Karmakar & Koyena Ghosh	HUMAN WILDLIFE COEXISTENCE	11.00AM - 11.30AM
II	Arpan Sen, Bipasha Saha & Debanjan Pal	HYDROPONIC AGRICULTURE	11.30AM - 12 NOON
III	Dipta Majhi, Sayani Dey & Saptarshi Sen	'IS INDIA SINKING'?	12 NOON - 12.30PM

This programme will be supervised by Dr Rituparna Sarkar, SACT-I, Dept. of Environmetal Science, Chandernagore College. Students of Semester-IV & VI Environmental Science (Hons.) are hereby instructed to reach the venue before the commencement of the programme.

Sd/-
Dr Rituparna Sarkar
SACT-I
Department of Environmental Science
Chandernagore College

Principal
Chandernagore College

Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
formerly College Dupleix
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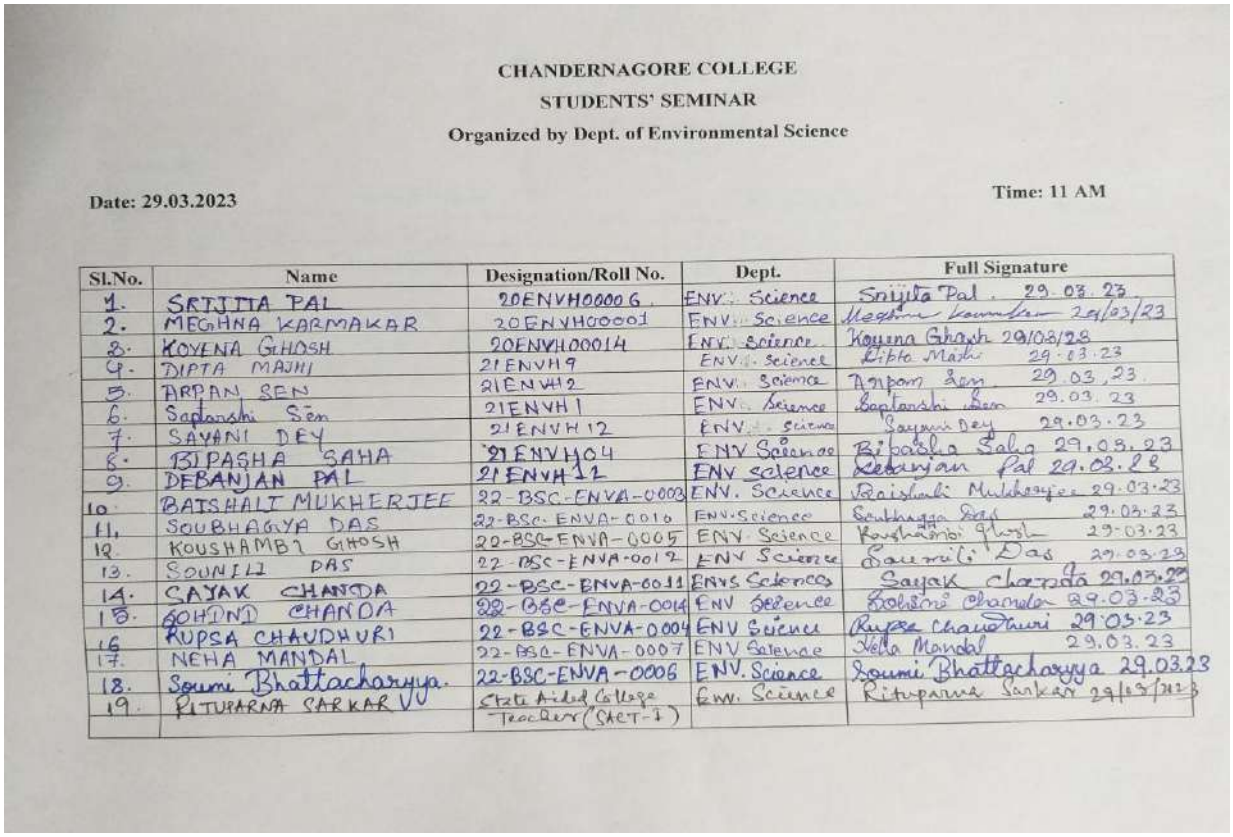
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution



CHANDERNAGORE COLLEGE

STUDENTS' SEMINAR

Organized by Dept. of Environmental Science

Date: 29.03.2023 **Time: 11 AM**

Sl.No.	Name	Designation/Roll No.	Dept.	Full Signature
1.	SRIJITA PAL	20ENVH00006	ENV. Science	Srijita Pal 29.03.23
2.	MEGHNA KARMAKAR	20ENVH00001	ENV. Science	Meghna Karmakar 29/03/23
3.	KOYENA GHOSH	20ENVH00014	ENV. Science	Koyena Ghosh 29/03/23
4.	DIPTA MAJHI	21ENVH9	ENV. Science	Dipta Majhi 29.03.23
5.	ARPAN SEN	21ENVH2	ENV. Science	Arpan Sen 29.03.23
6.	Saptanshi Sen	21ENVH1	ENV. Science	Saptanshi Sen 29.03.23
7.	SAYANI DEY	21ENVH12	ENV. Science	Sayani Dey 29.03.23
8.	BIPASHA SAHA	21ENVH04	ENV Science	Bipasha Saha 29.03.23
9.	DEBANJAN PAL	21ENVH11	ENV science	Debanjan Pal 29.03.23
10.	BAISHALI MUKHERJEE	22-BSC-ENVA-0003	ENV. Science	Baishali Mukherjee 29.03.23
11.	SOUBHAGYA DAS	22-BSC-ENVA-0010	ENV. Science	Soubhagya Das 29.03.23
12.	KOUSHAMBI GHOSH	20-BSC-ENVA-0005	ENV Science	Koushambi Ghosh 29.03.23
13.	SOUNIL DAS	22-BSC-ENVA-0012	ENV Science	Sounil Das 29.03.23
14.	SAYAK CHANDA	22-BSC-ENVA-0011	ENVS Sciences	Sayak Chanda 29.03.23
15.	ROHINI CHANDA	22-BSC-ENVA-0014	ENV Science	Rohini Chanda 29.03.23
16	RUPSA CHAUDHURI	22-BSC-ENVA-0004	ENV Science	Rupsa Chaudhuri 29.03.23
17.	NEHA MANDAL	22-BSC-ENVA-0007	ENV Science	Neha Mandal 29.03.23
18.	Soumi Bhattacharyya.	22-BSC-ENVA-0006	ENV. Science	Soumi Bhattacharyya 29.03.23
19.	RITUPARNA SARKAR	State Aided College Teacher (SACT-I)	Env. Science	Rituparna Sarkar 29/03/2023

Principal

Chandernagore College

STUDENTS' SEMINAR

Organized by

DEPARTMENT OF ENVIRONMENTAL SCIENCE

CHANDERNAGORE COLLEGE

This is to certify that Sri/Smt. SAPTARSHI SEN, STUDENT OF SEMESTER IV ENVIRONMENTAL SCIENCE HONOURS, of Chandernagore College has participated in the **STUDENTS' SEMINAR** on **23.03.2023** as a part of **SOFT SKILL DEVELOPMENT at Department of Environmental Science, Chandernagore College**.

Principal
Chandernagore College

IQAC, Coordinator
Chandernagore College

STUDENTS' SEMINAR

Organized by

DEPARTMENT OF ENVIRONMENTAL SCIENCE

CHANDERNAGORE COLLEGE

This is to certify that Sri/Smt. ARPAN SEN, STUDENT OF SEMESTER IV ENVIRONMENTAL SCIENCE HONOURS, of Chandernagore College has participated in the **STUDENTS' SEMINAR** on **23.03.2023** as a part of **SOFT SKILL DEVELOPMENT at Department of Environmental Science, Chandernagore College**.

Principal
Chandernagore College

IQAC, Coordinator
Chandernagore College

Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
formerly College Dupleix
Strand Road, Chandannagar, Hooghly, West Bengal, India, Pin-712136
Website: www.chandernagorecollege.ac.in Mail: office@chandernagorecollege.ac.in
Mob: 91-7439603177, Tel: 91-33-26835290
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution

ACTIVITY: SPECIAL CLASS ON SKILL ENHANCEMENT AND CAREER COUNSELING PROGRAMME FOR THE STUDENTS OF UG SEMESTER-IV OF COMMERCE (GENERAL), B.SC (PURE & BIO GENERAL) & SOCIOLOGY (HONOURS) OF CHANDERNAGORE COLLEGE FOR THE ACADEMIC SESSION: 2022-2023

Programme category: Skill Enhancement and Career Counseling Programme for The Students

Collaborating Organization: GEORGE TELEGRAPH TRAINING INSTITUTE

Topic of Discussion: **Career Counseling and Soft Skill Development**

Date: 21.03.2023

Venue: Charu Chandra Roy Memorial Hall, First Floor, Administrative Building, Main Campus, Chandernagore College.

Resource Persons: EXPERTS FROM GEORGE TELEGRAPH TRAINING INSTITUTE

Participants: 84

OBJECTIVE:

- The special class on guidance to competitive examinations will provide an overview of the different types and basic eligibility criteria of jobs available in the today's market for the students studying in the basic sciences, commerce and humanities streams of general education.
- The programme will provide an exposure to the students on the need and importance of learning systematically in a well-structured and disciplined manner for preparing themselves for various competitive examinations they would be appearing at the end of their present curriculum for entering into higher studies or in job market.
- The programme will also guide the students to learn the required skill, approach and aptitude needed for improving their academic as well as overall

competence for championing different competitive examinations/interviews in the near future.

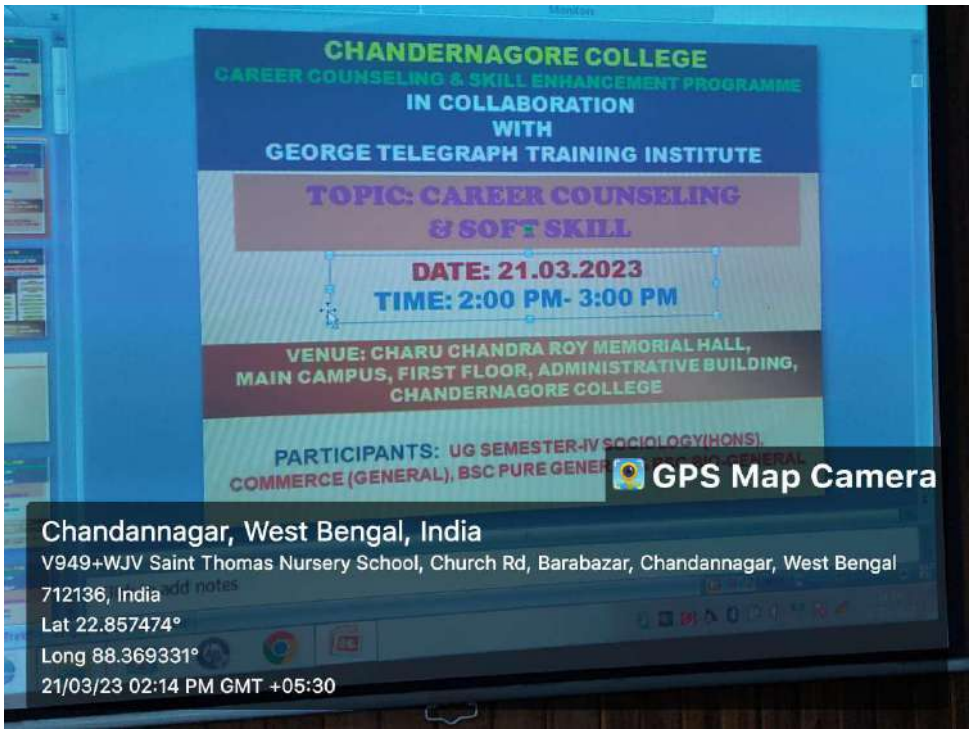
OUTCOME:

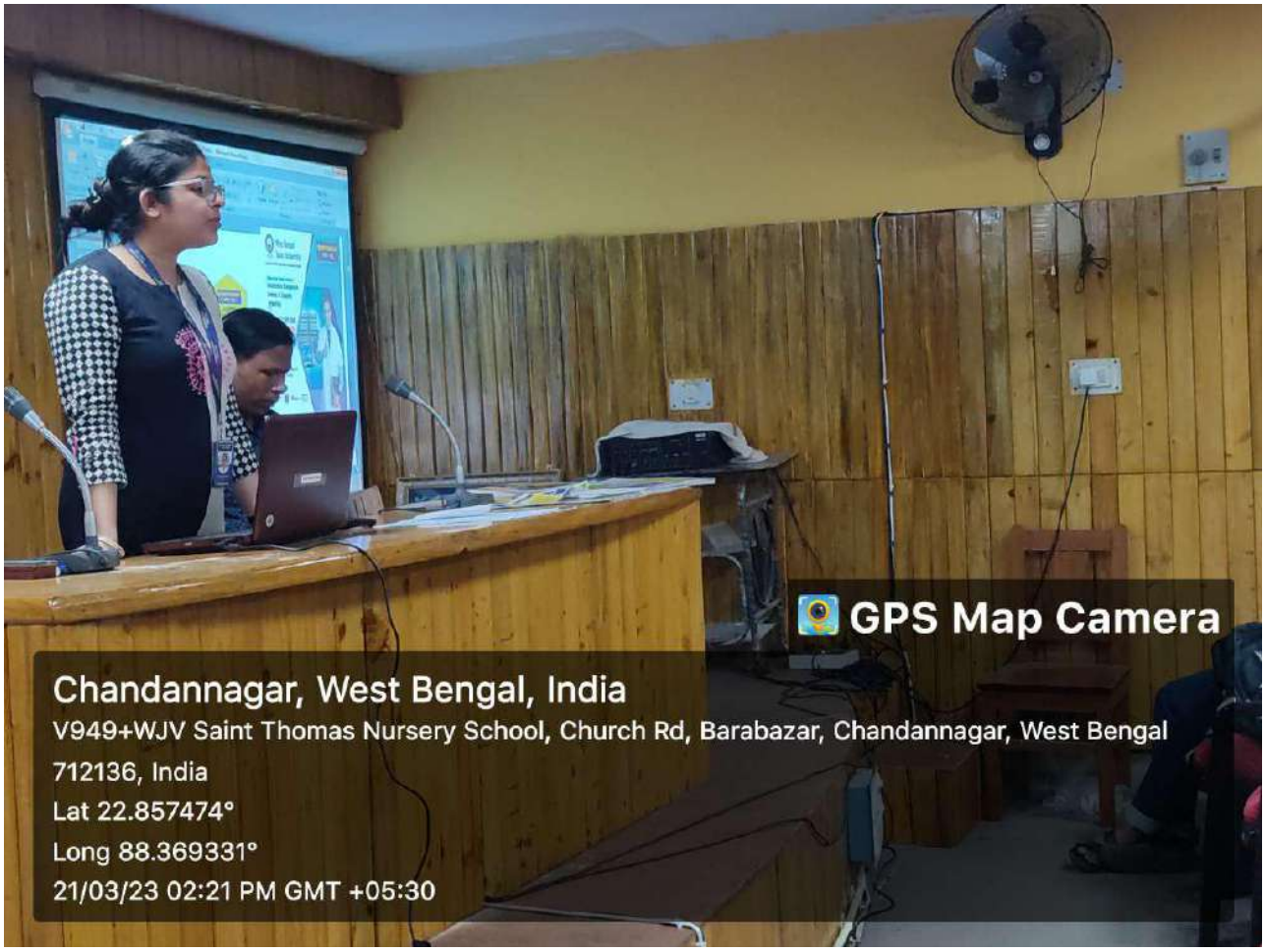
- ✓ The students were very enthusiastic and certainly found the topic of discussionsvery striking and pertinent for them.
- ✓ The experts guided the students about the basic approach and strategies that they should opt while preparing for different competitive examinations& interviews to achieve success in career building.
- ✓ Through different illustrations and positive deliberations, the students learnt the way of answering questions within minimum time-frame and in logical approach for achieving better rankings in different ensuing competitive examinations.

Principal
Chandernagore College

IQAC, Coordinator
Chandernagore College

Captured Moments of 'knowledge-sharing'classes taken by the Resource Persons of GEORGE TELEGRAPH TRAINING INSTITUTEwith the students of Chandernagore College




GPS Map Camera
Chandannagar, West Bengal, India
V949+WJV Saint Thomas Nursery School, Church Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.857474°
Long 88.369331°
21/03/23 02:21 PM GMT +05:30


GPS Map Camera
Chandannagar, West Bengal, India
V949+WJV Saint Thomas Nursery School, Church Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.857474°
Long 88.369331°
21/03/23 02:21 PM GMT +05:30

OFFICE OF THE PRINCIPAL

Chandernagore College

Estd. 1862

Strand Road, Barabazar, P.O. Chandernagore

Dist. Hooghly, West Bengal

NOTICE

No. 549 **20/03/2023**

All the UG Semester-IV students of following departments of Chandernagore College are hereby informed to attend the **Skill Enhancement and Career Counseling programmes** as per the following schedule:

VENUE: CHARU CHANDRA ROY MEMORIAL HALL,
MAIN CAMPUS, FIRST FLOOR, ADMINISTRATIVE BUILDING

Date: 21.03.2023 (Tuesday)

Time: **12:30 PM-1.30 PM**	**Time:** **2:00 PM-3:00 PM**
DEPARTMENTS: **HISTORY (HONS)** **EDUCATION (HONOURS)** **POLITICAL SCIENCE (HONS)** **TOPIC:** **GUIDANCE FOR COMPETITIVE EXAMINATIONS** **COLLABORATING ORGANIZATION:** **GEORGE TELEGRAPH TRAINING INSTITUTE**	**DEPARTMENTS:** **COMMERCE (GENERAL)** **B.SC.(PURE SC. GENERAL)** **B.SC. (BIO SCIENCE GENERAL)** **SOCIOLOGY (HONOURS)** **TOPIC:** **CAREER COUNSELING & SOFT SKILL DEVELOPMENT** **COLLABORATING ORGANIZATION:** **GEORGE TELEGRAPH TRAINING INSTITUTE**

Principal
Chandernagore College

Coordinator, IQAC
Chandernagore College

CHANDERNAGORE COLLEGE

CAREER COUNSELING & SKILL ENHANCEMENT PROGRAMME

IN COLLABORATION

WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

TOPIC: CAREER COUNSELING & SOFT SKILL

DATE: 21.03.2023

TIME: 2:00 PM- 3:00 PM

VENUE: CHARU CHANDRA ROY MEMORIAL HALL, MAIN CAMPUS, FIRST FLOOR, ADMINISTRATIVE BUILDING, CHANDERNAGORE COLLEGE

PARTICIPANTS: UG SEMESTER-IV SOCIOLOGY(HONS), COMMERCE (GENERAL), BSC PURE GENERAL & BSC BIO-GENERAL

CHANDERNAGORE COLLEGE

Name of the Event: CARRER COUNSELLING & SOFT SKILL

Name of the Department: BSC (PUREGEN+BIO GEN)

DATE: 21.03.23 TIME: 2.00 PM TO 4.00 PM

SLNO	ROLL NO	NAME OF THE STUDENT	SIGNATURE
1	21SCPG6	ANKUSH PATRA,	Ankush Patra.
2	21SCBG23	APU MONDAL	Apu Mondal
3	21SCBG9	ARIJIT SAHA	Arijit Saha
4	21SCBG45	ARPITA GHANTI	Arpita Ghanti
5	21SCPG26	BHIMSEN KUMAR GUPTA	Bhimsen kumar Gupta
6	21SCBG24	DEBTANU SANTRA	Debtanu Santra
7	21SCBG25	HRITAM DUTTA	Hritam Dutta.
8	21SCPG30	NAWIN PRASAD	Nawin Prasad
9	21SCBG35	PANCHANAN DAS	Panchanan Das.
10	21SCBG43	PRITAM DAS	Pritam Das.
11	21SCPG21	SARSWATI MAHATO	Sarswati Mahato
12	21SCPG31	SHANKAR NAYAK	Shankar Nayak
13	21SCBG37	SHIBNATH MONDAL	Shibnath Mondal
14	21SCBG6	SOUMYADEEP DAS	Soumyadeep Das
15	21SCBG22	SOUMYAJIT GHOSH	Soumyajit ghosh.
16	21SCBG33	SOURYA DIPTA BAG	Souryadipta Bag
17	21SCBG34	SUMANA SUR	Sumana Sur.
18	21SCPG22	SUPARNA NANDAN	Suparna Nandan
19	21SCPG14	SUPRADIP PATARI	Supradip Patari
20	21SCPG24	SURAJ SHAW	Suraj Shaw
21	21SCPG29	UTTAM PODDAR	Uttam poddar.

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Chandernagore College
Chandernagore

SEM-IV

CHANDERNAGORE COLLEGE

Name of the Event CARRER COUNSELLING & SOFT SKILL

Name of the Department COMMERCE (GEN)

DATE 21.03.23 TIME: 2.00 PM TO 4.00 PM

SLNO	ROLL NO	NAME OF THE STUDENT	SIGNATURE
1	21COMG27	ABHRAJIT ADAK	Abhrajit Adak
2	21COMG37	ADITYA PAKREY	Aditya Pakrey
3	21COMG80	ANIRBAN PAUL	Anirban Paul
4	21COMG54	ANNESHA ADAK	Annesha Adak
5	21COMG114	ANURUP SARKAR	Anurup Sarkar.
6	21COMG61	ARPAN JANA	Arpan Jana
7	21COMG46	ARPITA LAHA	Arpita Laha
8	21COMG15	ASISH KANU	Asish Kanu
9	21COMG3	ATANU BISWAS	Atanu Biswas.
10	21COMG30	BHASKAR PAL	Bhaskar Pal
11	21COMG78	DEBJYOTI CHAKRABORTY.	Debjyoti Chakraborty.
12	21COMG109	DIP SARKAR	Dip Sarkar
13	21COMG59	DIPANKAR DAS	Dipankar Das
14	21COMG50	GOPAL DAS	Gopal Das.
15	21COMG81	GUNJAN DEBNATH	Gunjan Debnath
16	21COMG105	HRISHAV CHAKRABORTY	Hrishav Chakraborty
17	21COMG85	INDRAJIT BANERJEE	Indrajit Banerjee
18	21COMG57	JISU DAS	Jisu Das
19	21COMG88	JOYDEEP KUNDU	Joydeep kundu
20	21COMG31	KIRONMOY GHOSH	Kironmoy Ghosh.
21	21COMG65	KRISHNENDU MAL	Krishnendu Mal
22	21COMG113	MD JAHIR UDDIN	Md. Jahir Uddin
23	21COMG19	NASIMUL MONDAL	Nasimul Mondal
24	21COMG55	NILOY DAS	Niloy Das.
25	21COMG64	PRADIP KUMAR PAL	Pradip kumar Pal
26	21COMG108	PRITAM GHOSH	Pritam Ghosh
27	21COMG111	PRODIP BAG	Prodip Bag
28	21COMG74	PROLOY PAUL	Proloy Paul
29	21COMG26	PUJA CHAUDHURY	Puja Chaudhury
30	21COMG33	PUNAM PASWAN	Punam Paswan
31	21COMG112	PUSPITA MONDAL	Puspita Mondal
32	21COMG60	RAJDEEP SAHA	Rajdeep Saha
33	21COMG40	RAJDIP BISWAS	Rajdip Biswas
34	21COMG84	RATNA NAYAK	Ratna Nayak
35	21COMG63	RESHMI SHAW	Reshmi Shaw.
36	21COMG1	RISHOV BASAK	Rishov Basak
37	21COMG72	RITI BODHAK	Riti Bodhak
38	21COMG76	RIYA SHUKLA	Riya Shukla
39	21COMG39	ROHIT DAS	Rohit Das.
40	21COMG115	ROHIT KONAR	Rohit konar
41	21COMG66	SAIKAT MAL	Saikat Mal
42	21COMG87	SAMPITA GHOSH	Sampita Ghosh.
43	21COMG22	SARAJIT KOLEY	Sarajit Koley
44	21COMG52	SARBOJIT KUNDU	Sarbojit Kundu
45	21COMG90	SAYAN GHOSAL	Sayan Ghosal

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Chandernagore

46	21COMG110	SAYAN NAYAK	Sayan Nayak
47	21COMG68	SAYANTAN DEY	Sayantan Dey
48	21COMG97	SHIBA BEHERA	Shiba Behera
49	21COMG29	SIDHARTHA NAYAK	Sidhartha Nayak
50	21COMG49	SOUMYA RAJBANSHI	Soumya Rajbanshi
51	21COMG62	SUBHADEEP HALDER	Subhadeep Halder
52	21COMG18	SUBHAJIT MAL	Subhajit mal
53	21COMG38	SUBHANKAR MANNA	Subhankar Manna.
54	21COMG83	SUBHRAJIT PAUL	Subhrajit Paul.
55	21COMG48	SUBHRANIL BISWAS	Subhranil Biswas
56	21COMG32	SUDIPTA MAL	Sudipta Mal
57	21COMG71	SUMAN DEY	Suman Dey
58	21COMG4	SUPARSHWA ROY	Suparshwa Roy
59	21COMG34	SUSMITA DAS	Susmita Das
60	21COMG35	SWAYATA SHAW	Swayata Shaw
61	21COMG77	TRISHA CHATTERJEE	Trisha Chatterjee.
62	21COMG107	UPASANA DAS	Upasana Das.
63	21COMG75	ZOYA QURESHI	Zoya Qureshi

64

Principal
Chandernagore College
Chandernagore

CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES

on

CAREER COUNSELING & SOFT SKILL DEVELOPMENT

Organized by

CHANDERNAGORE COLLEGE

IN COLLABORATION WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

This is to certify that Sri/Smt. APU MONDAL, STUDENT OF SEMESTER IV B.SC BIO-GENERAL of Chandernagore College has participated in the **SKILL ENHANCEMENT AND CAREER COUNSELING PROGRAMME** on **21.02.2023** as a part of **CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES at Chandernagore College**.

Principal
Chandernagore College

In-Charge
George Telegraph Training Institute

CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES

on

CAREER COUNSELING & SOFT SKILL DEVELOPMENT

Organized by

CHANDERNAGORE COLLEGE

IN COLLABORATION WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

This is to certify that Sri/Smt. ARIJIT SAHA, STUDENT OF SEMESTER IV B.SC BIO-GENERAL of Chandernagore College has participated in the **SKILL ENHANCEMENT AND CAREER COUNSELING PROGRAMME** on **21.02.2023** as a part of **CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES at Chandernagore College**.

Principal
Chandernagore College

In-Charge
George Telegraph Training Institute

पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL 69AB 259399

MEMORANDUM OF UNDERSTANDING (MoU)

This MoU is being executed between **Chandernagore College, Strand Road, Chandannagore, Dist- Hooghly, West Bengal, Pin – 712136** affiliated to The University of Burdwan & **The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , Howrah - 711204**

I. Deliverables of The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah:

The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah will conduct short-term training details for the students of your esteemed college as follows –

Course	TGTTI Suggested Course Name	Duration in Months	Eligibility criteria if any	TGTTI Suggested Course fees for University/ College/ Institute	University/ college share	**Net Course Fee ****	Minimum number of students / candidates required for running the course in each Batch
BA 1st, 2nd, 3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates

	Exam Course						
BCOM 1st , 2nd ,3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative Exam Course	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates
	Tally Prime and TDS Offline & Online (with Tally Certification)	70 Hours	HS Pass	4,800.00	480.00	**4,320.00**	40 Candidates
BSC 1st , 2nd, 3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative Exaam Course	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates

** Since Chandernagore College is not accepting any share from George Telegraph Training Institute for the conducted courses, the registered students will be exempted from the Original Course fees of GTTI and they will be required only to pay as per the "Net Course Fee" structure furnished for the above registered courses.

II. Deliverables of Chandannagar College:

1. Cooperation to conduct programs on mutually decided date, time and place.
2. Access to the students at Chandernagore College to motivate and interact with them relating to job opportunities and relevant trainings.
3. Provide necessary infrastructure to conduct interactive sessions with the students at Chandernagore College.

IV. Financial arrangements:

a. No financial commitment is required / involved with Chandernagore College to execute the terms and conditions of the MoU.

b. The George Telegraph Training Institute will charge course fees (Onetime Payment) for the training programme from the registered students as provided in the above table.

c. Since Chandernagore College is not accepting any share from George Telegraph Training

19.09.22

19.9.22

Institute for the conducted courses, the registered students will be exempted from the Original Course fees of GTTI and they will be required only to pay as per the "Net Course Fee" structure furnished above for the registered courses

V. Terms and conditions:

- It is mutually understood and agreed by and between Chandernagore College and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , that the MoU will remain effective for 3 (Three) years. The MoU may be extended or revised after every 3 (Three) years on mutual discussion between the two Institutes viz. Chandernagore College, and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah. Awareness and Seminars would be conducted as and when required, either at Chandernagore College, Chandannagar or The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah or both places, on the basis of mutual consent. The MoU may be extended or revised after every 3 (Three) years on mutual discussion between the two Institutes viz. Chandernagore College, and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah.
- This MoU shall be governed and construed according to the laws of the country for each participating party. Any dispute will jointly be resolved involving the Principal of Chandernagore College and the The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah, in a spirit of independence, mutual respect, and shared responsibility.
- The MoU may be terminated by either party after giving a notice of six months (180 days) provided that this clause will be operative only if either party violates the terms of MoU or if the parties feel that no useful purpose would be served by further continuing it either due to change in circumstances or change in constituting parties.

VI. Confidentiality:

Both the parties shall maintain in confidence and safeguard all information that the each party may come to know as a result of this Agreement.

XI. Entire Agreement - Execution and Modification

This Agreement wholly cancels, terminates and supersedes any and all previous agreements, negotiations, commitments and writings between the Parties in connection with the subject matter of this Agreement.

19.09.22

Principal
Chandernagore College

Principal
Chandernagore College
Chandernagore

19.9.22

Jt. Director (Operations)
The George Telegraph Training Institute,
A: 1/3, Belur Road, Liluah
Howrah - 711204

Date:
Place: Chandannagar, Hooghly

Witness
1: 19.09.2022
2: 19.09.2022.

Witness:
1: 19.9.22
2: 19.9.22.

Department of Philosophy
Chandernagore College

Strand Road, Barabazar, P.O. Chandernagore
Dist. Hooghly, West Bengal, 712136

REPORT OF THE ACTIVITY

Name of the Activity: **Student's Seminar & Zero Discrimination Day Awareness Programme**

Category: Capacity Development and Skill Enhancement Programme

Title of the Lecture: ভারতীয় দার্শনিক তত্ত্ব ও প্রয়োগে বৈষম্যহীন বিশ্বচেতনা: একটি অনুসন্ধান

Date, Time, Venue: 01.03.2023, Room No: 205

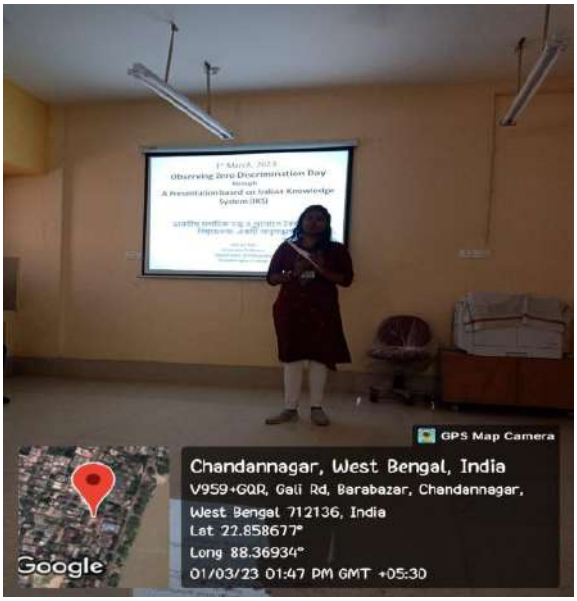
Resource Person: Malay Das, Associate Professor Department of Philosophy, Chandernagore College and Anipa Bhattacharya, Student Semester VI Honours Chandernagore College

Total No. of participants: 92

Objectives and outcome: The Department of Philosophy, Chandernagore College observes Zero Discrimination Day on 1st March 2023, organizing a seminar at Room No. 205, Gurudev Bhavan. The objective of the seminar is to understand the very sense of the term "Zero Discrimination" illustrating it from the perspective of Indian Knowledge System (IKS). Smt. Anipa Bhattacharya, a student of Semester-VI, Philosophy (Honours), presents a brief but clear introduction to Zero Discrimination and its significance in society at large. Sri Malay Das, Associate Professor, Department of Philosophy, of the College, illustrates the concept of Zero Discrimination from the Indian perspective and associates it with the thought of Fridays for Future Movement. The programme is chaired by Smt. Bratati Kundu Dey, HOD, Department of Philosophy. Smt. Esha Chatterjee, Assistant Professor, Department of Philosophy, coordinates the whole programme. Other faculty members of the Department of Philosophy, namely Smt. Rita Mallick, Associate Professor, and Smt. Dipa Goswami, Associate Professor, and Smt. Atashi Sarbagya, SACT, perform the role of co-coordinator of the seminar. A large number of students both from the Day and Morning sections participate in the seminar that makes the whole programme lively and successful.

Dr. Bratati Kundu Dey
Head, Department of Philosophy
Chandernagore College

Geo-tag photos: Given below.



Department of Philosophy
Chandernagore College

Strand Road, Barabazar, P.O. Chandernagore
Dist. Hooghly, West Bengal, 712136

Notice

Date: 23.02.2023

Department of Philosophy is organizing **Zero Discrimination Day** Awareness Program on 1st March, as per the following schedule. Faculty members of the College and Students are cordially invited to join the said.

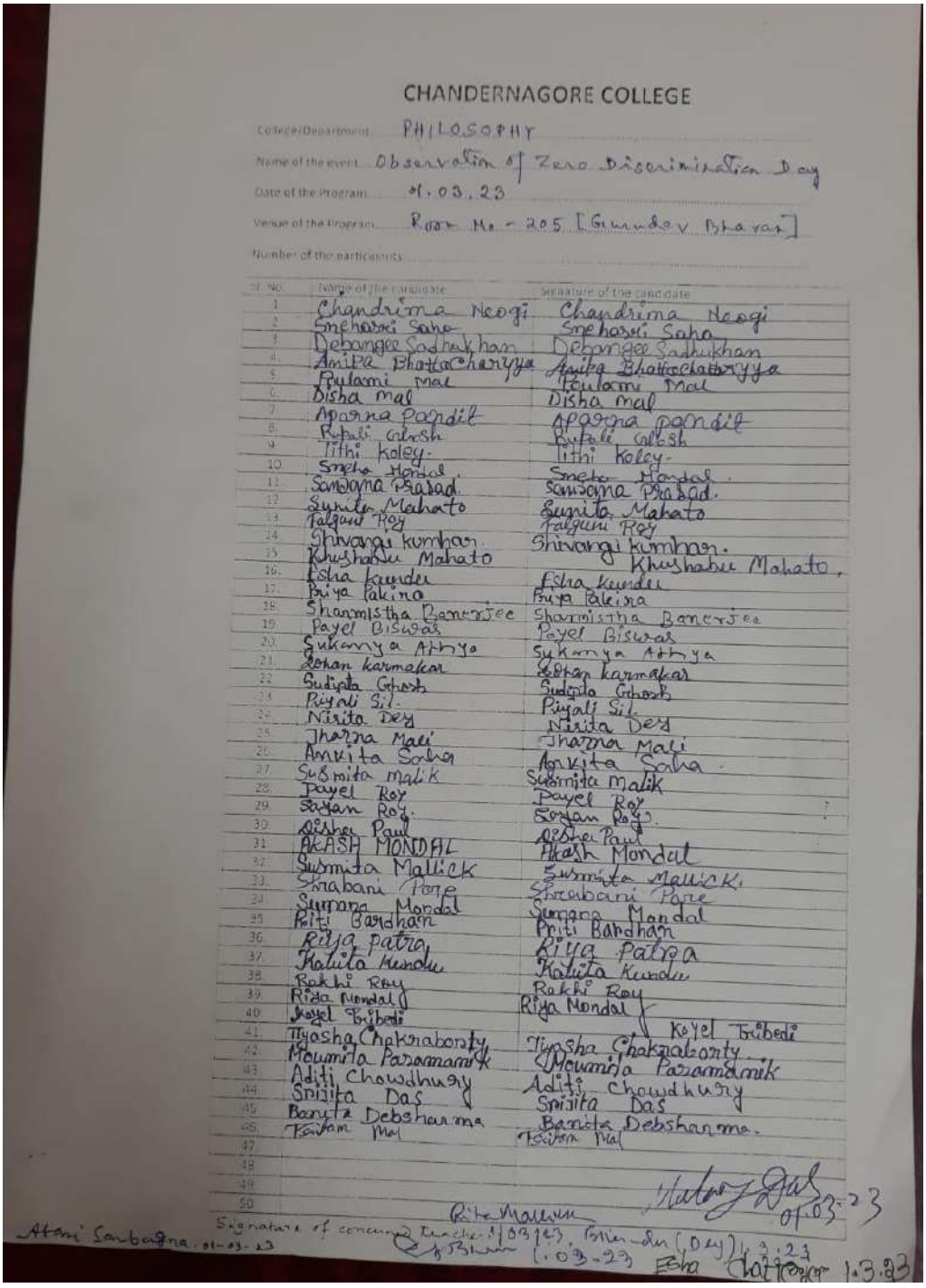
SL NO	NAME OF SPEAKER(S)	TITLE OF LECTURE	DATE, TIME& venue
1	**Malay Das** Associate Professor, Dept. of Philosophy, Chandernagore College	ভারতীয় দার্শনিক তত্ত্ব ও প্রয়োগে বৈষম্যহীন বিশ্বচেতনা: একটি অনুসন্ধান	01.03.2023 12noon to 1:00 pm Room No:205
2	**Students Lecture**		

Dr.Bratati Kundu Dey
Head Department of Philosophy
Chandernagore College

Department of Philosophy
Chandernagore College

Strand Road, Barabazar, P.O. Chandernagore
Dist. Hooghly, West Bengal, 712136

ATTENDANCE



CHANDERNAGORE COLLEGE

College/Department: PHILOSOPHY

Name of the event: Observation of Zero Discrimination Day

Date of the Program: 01.03.23

Venue of the Program: Room No - 205 [Gurudev Bhavan]

Number of the participants:

Sl. No.	Name of the candidate	Signature of the candidate
1	Chandrima Neogi	Chandrima Neogi
2	Snehasri Saha	Snehasri Saha
3	Debangee Sadhukhan	Debangee Sadhukhan
4	Anika Bhattacharyya	Anika Bhattacharyya
5	Ayulami Mal	Ayulami Mal
6	Disha Mal	Disha Mal
7	Aparna Pandit	Aparna pandit
8	Rupali Adsh	Rupali Adsh
9	Tithi Koley	Tithi Koley
10	Sneha Mondal	Sneha Mondal
11	Sanjana Prasad	Sanjana Prasad
12	Sunita Mahato	Sunita Mahato
13	Falguni Roy	Falguni Roy
14	Shivangi kumhar	Shivangi kumhar
15	Khushabu Mahato	Khushabu Mahato
16	Esha Kundu	Esha Kundu
17	Riya Pakira	Riya Pakira
18	Sharmistha Banerjee	Sharmistha Banerjee
19	Payel Biswas	Payel Biswas
20	Sukanya Atriya	Sukanya Atriya
21	Sohan karmakar	Sohan karmakar
22	Sudipta Ghosh	Sudipta Ghosh
23	Piyali Sil	Piyali Sil
24	Nisita Dey	Nisita Dey
25	Jhanna Mali	Jhanna Mali
26	Ankita Saha	Ankita Saha
27	Sushmita Malik	Sushmita Malik
28	Payel Roy	Payel Roy
29	Sajan Roy	Sajan Roy
30	Disha Paul	Disha Paul
31	AKASH MONDAL	Akash Mondal
32	Sushmita Mallick	Sushmita Mallick
33	Shrabani Pore	Shrabani Pore
34	Sumana Mondal	Sumana Mondal
35	Priti Bardhan	Priti Bardhan
36	Riya Patra	Riya Patra
37	Kakita Kundu	Kakita Kundu
38	Rakhi Roy	Rakhi Roy
39	Riya Mondal	Riya Mondal
40	Koyel Tribedi	Koyel Tribedi
41	Tiyasha Chakraborty	Tiyasha Chakraborty
42	Moumita Paramanik	Moumita Paramanik
43	Aditi Chowdhury	Aditi Chowdhury
44	Srijita Das	Srijita Das
45	Banita Debsharma	Banita Debsharma
46	Tushar Mal	Tushar Mal
47		
48		
49		
50		

Rita Mallick

01.03.23

Signature of concerned Teacher: 1/03/23, Esha 1.03.23

Atani Sanbagna 01-03-23

Department of Philosophy
Chandernagore College

Strand Road, Barabazar, P.O. Chandernagore
Dist. Hooghly, West Bengal, 712136

CERTIFICATE

Zero Discrimination Day
Organized by
Department of PHILOSOPHY
Chandernagore College
on
01.03.2023

This is to certify Smt. **Bonita Debsharma, CHANDANNAGAR** of B.A. **SEMESTER-VI** ***Honours*** has participated in the **Zero Discrimination Day** Awareness Program on 1st March,2023.

Principal,
Philosophy
Chandernagore College

Head Department of
Chandernagore College

DEPARTMENT OF BOTANY
CHANDERNAGORE COLLEGE
Chandernagore, Hooghly- 712136

REPORT OF THE PROGRAMME

PROGRAMME NAME: **CELEBRATION OF NATIONAL SCIENCE DAY**

ACTIVITY: **STUDENT'S SEMINAR**

DATE: **28/02/2023**

INTRODUCTION:

National Science Day is celebrated in India on 28th February of every year to mark the discovery of the Raman Effect by Indian Scientist Sir C. V. Raman on 28/02/1928. For his discovery Sir C. V. Raman was awarded the Nobel Prize in 1930. In 1986, the National Council for Science and Technology Communication asked the government of India to designate the 28th February as National Science Day. The event is now being celebrated all over India in schools, colleges, universities and other academic, scientific , technical, medical, and research institutions.

OBJECTIVE:

1. To celebrate National Science Day in the Department of Botany, Chandernagore College.
2. To train the students for delivering lectures by using Information and Communication Technology (ICT).

OUTCOME:

In the Department of Botany, Chandernagore College celebrated National Science Day on 28th February, 2023 by organizing Student's seminar. All the faculty members (6) and all the students of Semester VI honours (11) were actively participated in this programme. The details of the programme are as follows.

Date	Venue	Participating Students	Speakers	Title
28.02.2022 (11.00 AM-12.30 PM)	**Department of Botany**	**Students of Semester VI Botany Honours**	**Sarmistha Debnath Arindam Guha**	**Angiospermic Embryo**
			Ankit Saha Sathi Ghosh	**Plant Hormone-Cytokinin**
			Joy Ghosh Jyotishko Sasmal	**Photosynthesis**
			Saptak Adhikary Shovan Dey	**Photoperiodism**
			Pronati Aich Soumi Manna Rani Mal	**ATP Synthase**

28.2.23.

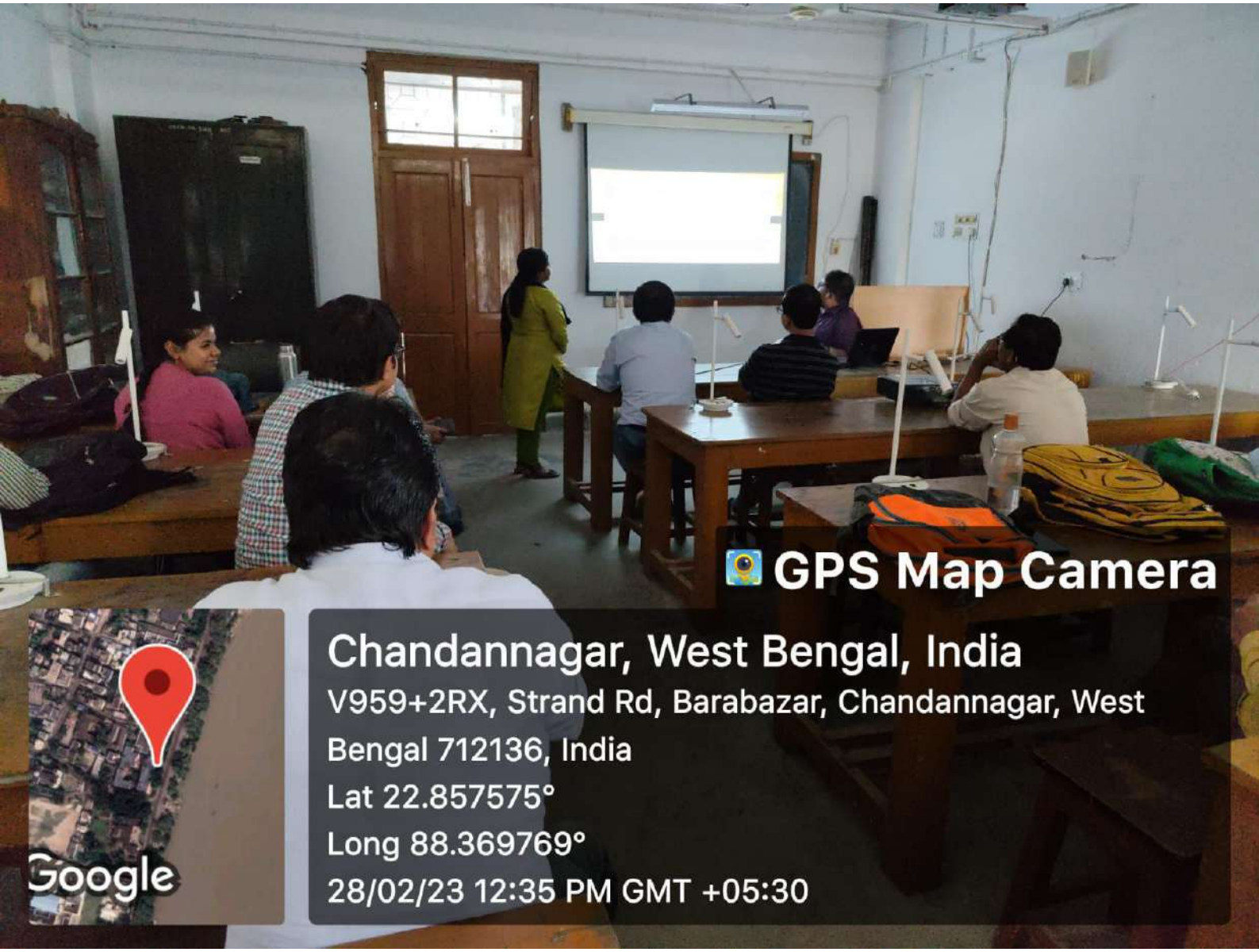
Signature of the faculty members

Chiranjit Sarkar 28/2/23

28/02/2023.

28/2/23

Gautam Ganguly 28/2/23


GPS Map Camera
Chandannagar, West Bengal, India
V959+2RX, Strand Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.857575°
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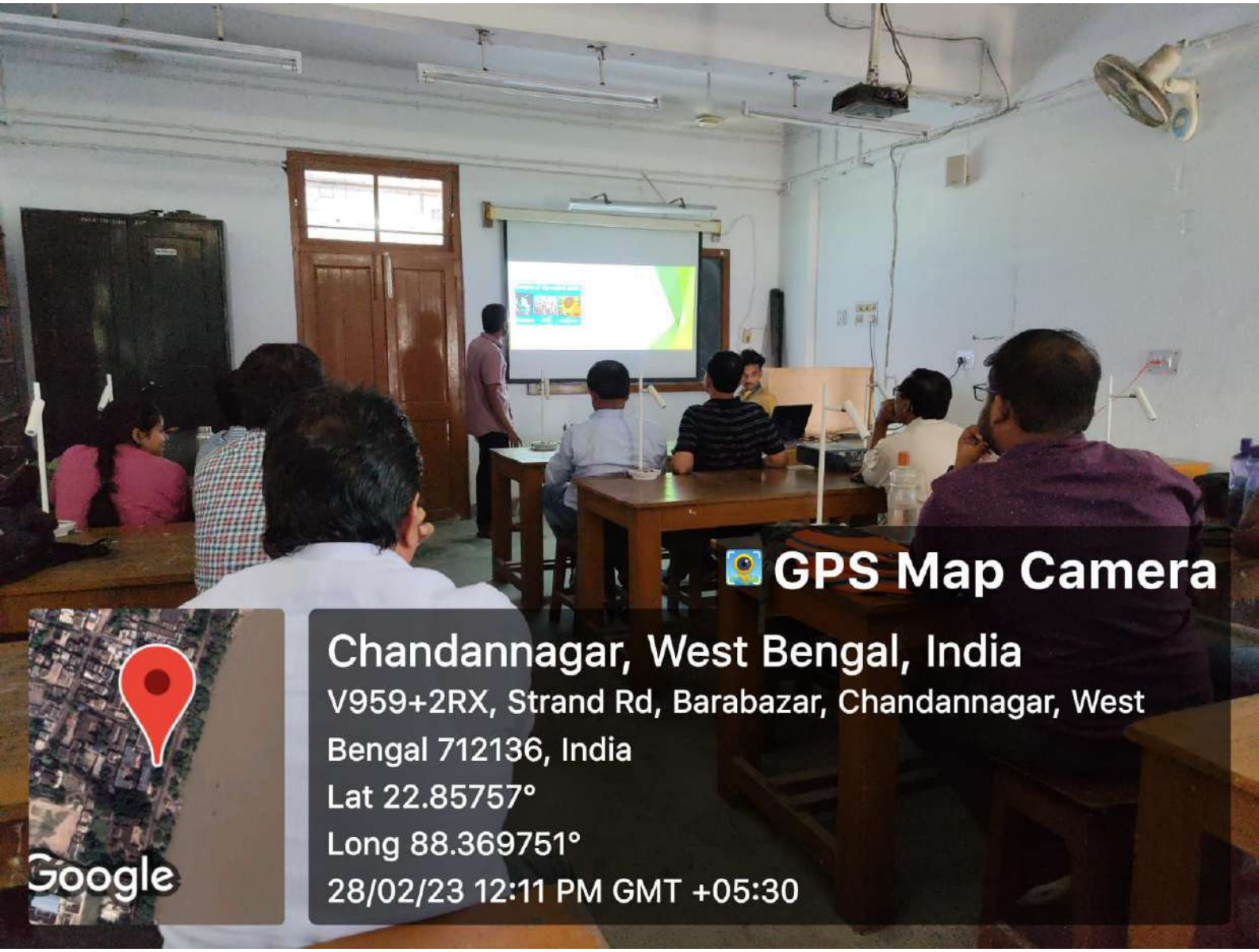
28/02/23 12:35 PM GMT +05:30
Google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Chandannagar, West Bengal, India
V959+2RX, Strand Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.85757°
Long 88.369751°
28/02/23 12:11 PM GMT +05:30
Google

DEPARTMENT OF BOTANY
CHANDERNAGORE COLLEGE
Chandernagore, Hooghly- 712136

No.- Bot/9/23 **NOTICE** **Date: 23.02.2023**

To Celebrate National Science day, a student seminar will be organized by the Department of Botany, Chandernagore College on 28.02.2023 (Tuesday) from 11.00 AM. All the faculty members and students of this department are hereby asked to participate in the said programme.

Details of the programme are given below-

Date	Venue	Participating Students	Speakers	Title
28.02.2022 (11.00 AM-12.30 PM)	**Department of Botany**	**All the students of Semester VI Botany honours**	**Sarmistha Debnath Arindam Guha**	**Angiospermic Embryo**
			Ankit Saha Sathi Ghosh	**Plant Hormone-Cytokinin**
			Joy Ghosh Jyotishko Sasmal	**Photosynthesis**
			Saptak Adhikary Shovan Dey	**Photoperiodism**
			Pronati Aich Soumi Manna Rani Mal	**ATP Synthase**

23/2/23

Head of the Department of Botany
CHANDERNAGORE COLLEGE
Chandernagore, Hooghly
Govt. of W. Bengal

National Science-Day Celebration

28/02/2023

Signature of Students present:

1. Sathi Ghosh
2. Saptak Adhikary
3. Sovan Dey
4. Joy Ghosh
5. Ankit Saha.
6. Pranati Aich.
7. Rani Mal.
8. Soumi Manna
9. Jyotishko Sasmal
10. Sharmistha Debnath
11. Arindam Guha

1. Chiranjit Mukherjee 28/02/23
2. Brij Kumar Tiwary 28/2/23
3. ~~Afrinshab Laha 28/2/2023~~
4. Gautam Ganguly 25/2/23
5. Swadesh Sarkar. 28/02/2023.
6. Sudhendu Seth (Naidu) 20.2.23.

Title of topic –

1. ANGIOSPERMIC EMBRYO (Sarmistha Debnath, Arindam Guh
2. PLANT HORMONE - CYTOKININ (Ankit Saha, Sathi Ghosh)
3. PHOTOSYNTHESIS (Joy Ghosh, Jyotishko Sasmal)
4. PHOTOPERIODISM (Saptak Adhikary, Shovan Dey)
5. ATP - SYNTHASE (Pranati Aich, Rani Mal, Soumi Manna).

STUDENTS' SEMINAR

Organized by

DEPARTMENT OF BOTANY

CHANDERNAGORE COLLEGE

This is to certify that Sri/Smt. SATHI GHOSH, STUDENT OF SEMESTER VI BOTANY HONOURS, of Chandernagore College has participated in the **STUDENTS' SEMINAR** on **28.02.2023** as a part of **SOFT SKILL DEVELOPMENT at Department of Botany, Chandernagore College**.

Principal
Chandernagore College

Head
Department of Botany

STUDENTS' SEMINAR

Organized by

DEPARTMENT OF BOTANY

CHANDERNAGORE COLLEGE

This is to certify that Sri/Smt. SAPTAK ADHIKARY, STUDENT OF SEMESTER VI BOTANY HONOURS, of Chandernagore College has participated in the **STUDENTS' SEMINAR** on **28.02.2023** as a part of **SOFT SKILL DEVELOPMENT at Department of Botany, Chandernagore College**.

Principal
Chandernagore College

Head
Department of Botany

Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
formerly College Dupleix
Strand Road, Chandannagar, Hooghly, West Bengal, India, Pin-712136
Website: www.chandernagorecollege.ac.in Mail: office@chandernagorecollege.ac.in
Mob: 91-7439603177, Tel: 91-33-26835290
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution

ACTIVITY: **SPECIAL CLASS ON CAREER COUNSELING & SOFT SKILL DEVELOPMENT PROGRAMME FOR THE STUDENTS OF UG SEMESTER-VI B. COM (GENERAL) & B.SC. (GENERAL) OF CHANDERNAGORE COLLEGE FOR THE ACADEMIC SESSION: 2022-2023**

Programme category: Capacity Building Programme & Skill Enhancement Courses for the students

Collaborating Organization: GEORGE TELEGRAPH TRAINING INSTITUTE

Topic of Discussion: **CAREER COUNSELING & SOFT SKILL DEVELOPMENT**

Date and time Schedule: 21.02.2023 (2 PM- 3 PM)

Venue: Charu Chandra Roy Memorial Hall, First Floor, Administrative Building, Main Campus, Chandernagore College.

Resource Persons: EXPERTS OF GEORGE TELEGRAPH TRAINING INSTITUTE

Participants: 65

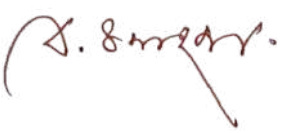
OBJECTIVE:

- The capacity building programme will provide an overview of the different types and basic eligibility criteria of jobs available in the today's market for the students studying in the basic sciences& commerce streams of general education.
- The programme will provide an exposure to the students on the need and importance of learning various types of soft skill trainings needed for accomplishing success in jobs, business and in other services through maintaining healthy relationships with coworkers and customers, via cooperation and communication within the workplace and trust among colleagues and customers.
- The programme will also guide the students to learn the required soft skill, approach and aptitude needed for improving their academic as well as overall

competence for championing different competitive examinations/interviews in the near future.

OUTCOME:

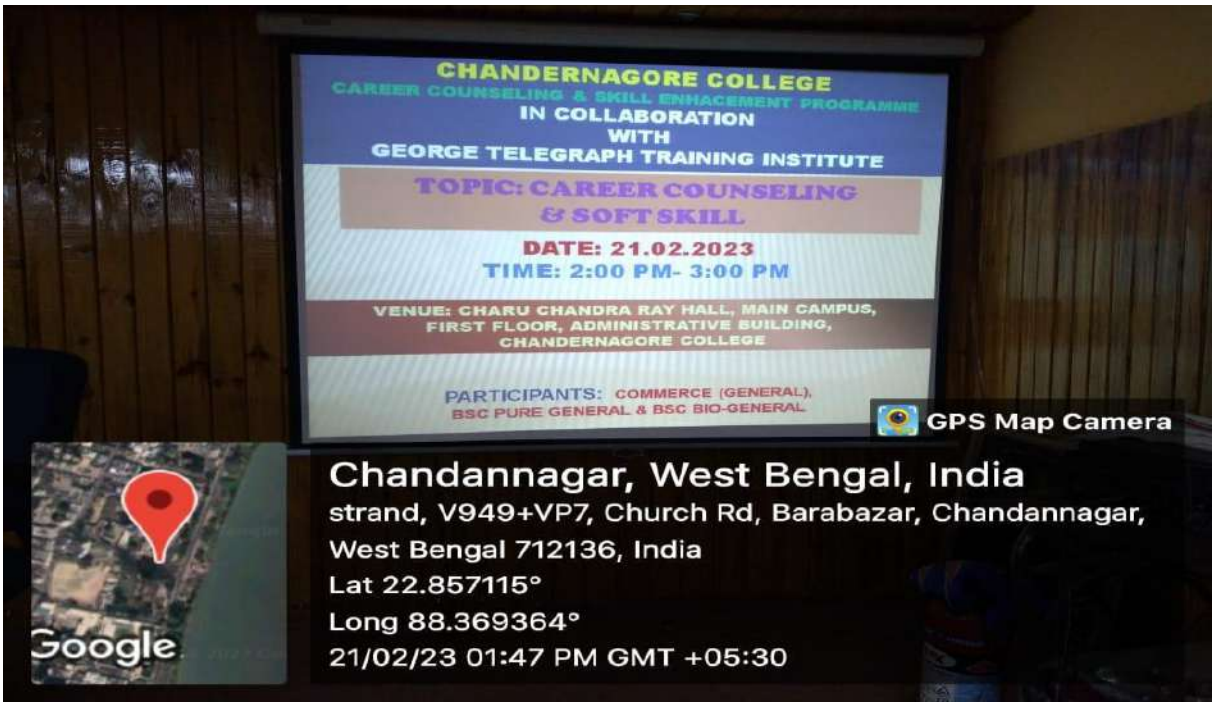
- ✔ The students were very enthusiastic and certainly found the topic of discussion very striking and pertinent for them.
- ✔ The experts guided the students about the basic approach and strategies that they should opt while preparing for different competitive examinations& interviews to achieve success in career building.
- ✔ Through different illustrations and positive deliberations, the students learnt the way of answering questions within minimum time-frame and in logical approachwith betterrankings in different forthcoming competitiveexaminations.



Principal
Chandernagore College

IQAC, Coordinator
Chandernagore College

Captured Moments of 'knowledge-sharing'classes taken by the Resource Persons of GEORGE TELEGRAPH TRAINING INSTITUTEwith the students of Chandernagore College



OFFICE OF THE PRINCIPAL

Chandernagore College

Estd. 1862

Strand Road, Barabazar, P.O. Chandernagore

Dist. Hooghly, West Bengal

NOTICE

No.520 **16/02/2023**

All the students of History (Hons.), Education (Hons.), Political Science (Hons.), Sociology ((Hons.) & B.Com. (General), B.Sc. (Pure-General) and B.Sc. (Bio-General) of Chandernagore College, are requested to attend the **Skill Enhancement and Career Counseling programmes** as per the following schedule:

VENUE: CHARU CHANDRA RAY HALL, MAIN CAMPUS, FIRST FLOOR, ADMINISTRATIVE BUILDING Date: 21.02.2023 (TUESDAY)		
Semester	**Time: 12:30-1:30 PM**	**Time: 2:00-3:00 PM**
UG Semester- VI	**DEPARTMENTS:** HISTORY (HONS.) EDUCATION (HONS.) POLITICAL SCIENCE (HONS.) SOCIOLOGY ((HONS.) **TOPIC:** GUIDANCE FOR COMPETITIVE EXAMS **COLLABORATING ORGANIZATION:** GEORGE TELEGRAPH TRAINING INSTITUTE	**DEPARTMENTS:** B. COM. (GENERAL) B.Sc. (PURE GENERAL) B.Sc. (BIO-GENERAL) **TOPIC:** CAREER COUNSELING & SOFT SKILL DEVELOPMENT **COLLABORATING ORGANIZATION:** GEORGE TELEGRAPH TRAINING INSTITUTE

Principal
Chandernagore College

Coordinator, IQAC
Chandernagore College

CHANDERNAGORE COLLEGE

CAPACITY DEVELOPMENT & SKILL ENHACEMENT PROGRAMME

IN COLLABORATION
WITH
GEORGE TELEGRAPH TRAINING INSTITUTE

TOPIC: CAREER COUNSELING & SOFT SKILL

DATE: 21.02.2023
TIME: 2:00 PM- 3:00 PM

VENUE: CHARU CHANDRA RAY HALL, MAIN CAMPUS, FIRST FLOOR, ADMINISTRATIVE BUILDING, CHANDERNAGORE COLLEGE

PARTICIPANTS: COMMERCE (GENERAL), BSC PURE GENERAL & BSC BIO-GENERAL

Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
Formerly College Dupleix
Strand Road, Chandannagar, Hooghly, West Bengal, India, Pin-712136
Website:www.chandernagorecollege.ac.inMail:office@chandernagorecollege.ac.in
Mob:91-7439603177,Tel:91-33-26835290
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution

CHANDERNAGORE COLLEGE

Name of the Event: CARRER COUNSELLING & SOFT SKILL
Name of the Department: BSC(PURE GEN+BIO GEN) Semester- VI
DATE: 21.2.23 TIME: 2.00PM TO 3.00 PM

SLNO	ROLL NO	NAME OF THE STUDENT	SIGNATURE
1	20SCPG8	AKASH TANTI	
2	20SCBG41	ARIPA SARKAR	Aripa Sarkar.
3	20SCPG26	CHANDAN RAM	Chandan Ram.
4	20SCPG14	JIT MONDAL	Jit Mondal
5	20SCBG10	MASUMA YESMIN	
6	20SCPG5	MEGHA BISWAS	megha Biswas
7	20SCBG20	MOUMITA PAUL	Moumita Paul.
8	20SCPG15	NAYAN CHANDRA BAPARI	Nayan Chandra Bapari
9	20SCPG11	NEELAM NAYAK	Neelam Nayak
10	20SCBG42	PRATYUSH NANDY	Pratyush Nandy.
11	20SCPG13	REZA AHMED ANSARI	Reza Ahmed Ansari
12	20SCBG40	RIPAN RUDRA	Ripan Rudra
13	20SCPG3	SANCHARI MONDAL	Sanchari Mondal.
14	20SCBG26	SATYENDRANATH NATH	Satyendranath Nath
15	20SCB37	SHREYA DAS	Shreya Das.
16	20SCPG24	SOUVIK KOLEY	
17	20SCPG22	SREYASRI SARKAR	Sreyasri Sarkar
18	20SCBG12	SUBIR SAMADDAR	Subir Samaddar
19	20SCBG35	SUDIPTA ROY	Sudipta Roy

Signature of Faculty

Signature of Resource Person

GTTI
Arpita Chakraborty

GTTI
Sujit Chatterjee

GTTI
Sulagna Das
Sayan Banerjee

21.2.23
Principal
Chandernagore College
Chandernagore

Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
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Mob:91-7439603177,Tel:91-33-26835290
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution

CHANDERNAGORE COLLEGE
Name of the Event: CARRER COUNSELLING & SOFT SKILL
Name of the Department: COMMERCE (GEN) Semester - VI
DATE: 21.2.23 TIME: 2.00PM TO 3.00 PM

SLNO	ROLL NO	NAME OF THE STUDENT	SIGNATURE
1	20COMG46	ABDUL ASHIK SARKAR	Abdul Ashik Sarkar
2	20COMG56	ABHIJIT DAS	Abhijit Das
3	20COMG7	ABHRAJIT MAITY	Abhrajit Maity
4	20COMG42	ANISHA GUHA	Anisha Guha
5	20COMG1	ANUSHKA CHAKRABORTY	Anushka Chakraborty
6	20COMG58	ATANDRITA CHAKRABORTY	Atandrita Chakraborty.
7	20COMG44	ATANU BISWAS	Atanu Biswas
8	20COMG41	AYAN SADHUKHAN	Ayan Sadhukhan
9	20COMG6	DEBJIT DAS	Debjit Das
10	20COMG54	DIBYENDU GHOSH	Dibyendu Ghosh.
11	20COMG64	EKTA SINGH	Ekta Singh.
12	20COMG57	ESHANI MUKHERJEE	Eshani Mukherjee
13	20COMG33	GUDDU SHAW	
14	20COMG73	GUNITI RADHA KRISHNA RAO	Guniti Radha Krishna Rao
15	20COMG55	HEMANTA HALDER	Hemanta Halder
16	20COMG72	K MUKUND RAO	K. Mukund Rao
17	20COMG32	KIRAN KUMARI LAL	Kiran Kumari Lal
18	20COMG21	KUNTAL DE	Kuntal De
19	20COMG76	MD FARHAN SHAHID	Md Farhan Shahid
20	20COMG40	MUNSHI MD SAIFULLAH	Munshi Md Saifullah
21	20COMG36	PINTU MONDAL	Pintu Mondal
22	20COMG69	POULAMI MONDAL	Poulami Mondal
23	20COMG78	PRITAM AICH	Pritam Aich.
24	20COMG60	PRIYANKA NAYAK	Priyanka Nayak
25	20COMG26	RAHIT ROY	Rahit Roy.
26	20COMG52	RAHUL KR SINGH	Rahul Kr. Singh
27	20COMG65	RAHUL SAHA	Rahul Saha.
28	20COMG39	RAJAT ROY	Rajat Roy.
29	20COMG67	RANJAN GHOSH	Ranjan Ghosh
30	20COMG50	RITANKAR BISWAS	Ritankar Biswas
31	20COMG81	RITWIK KARMAKAR	Ritwik Karmakar
32	20COMG68	RIYA GUPTA	Riya Gupta
33	20COMG74	ROHIT KUMAR DEY	Rohit Kumar Dey
34	20COMG70	SARBOJIT KAR	
35	20COMG66	SAYAN BARIK	Sayan Barik
36	20COMG24	SAYAN KOLEY	Sayan Koley
37	20COMG45	SAYAN PAL	
38	20COMG14	SK MONIRUL RAHAMAN	
39	20COMG75	SNEHASIS CHATTERJEE	Snehasis Chatterjee
40	20COMG53	SOUMIK ROY	Soumik Roy.
41	20COMG63	SOUMIK SARKAR	
42	20COMG31	SOURAJIT DARI	Sourajit Dari
43	20COMG38	SOUVIK GHOSH	Souvik Ghosh
44	20COMG51	SRIKANTA NAYAK	Srikanta Nayak
45	20COMG43	SUBHA PAL	Subha Pal
46	20COMG11	SUBHA SIL	Subha Sil
47	20COMG77	SUBHAM HAIT	Subham Hait
48	20COMG59	SUJASH BANERJEE	Sujash Banerjee
49	20COMG25	SUVAM KUMAR LAHA	Suvam Kumar Laha
50	20COMG2	SWAPNA SHAW	Swapna Shaw
51	20COMG71	SWESTASWA NANDY	
52	20COMG65	TANAJIT ROY	Tanajit Roy
53	20COMG37	TANMOY PAL	Tanmoy Pal
54	20COMG62	UJJAL SASMAL	Ujjal Sasmal
55	20COMG8	UMAPADA CHATTERJEE	Umapada Chatterjee

Principal
Chandernagore College
Chandernagore

CAREER COUNSELING PROGRAMMES

On

GUIDANCE FOR COMPETITIVE EXAMINATIONS

Organized by

CHANDERNAGORE COLLEGE

IN COLLABORATION WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

This is to certify that Smt. MOUMITA PAUL, 20SCBG20,of Chandernagore College has participated in the **SPECIAL CLASSES ON CAREER COUNSELING & SOFT SKILL DEVELOPMENT** on **21.02.2023** as a part of **CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES at Chandernagore College**.

Principal
Chandernagore College

Jt. Director
George Telegraph Training Institute

CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES

on

CAREER COUNSELING & SOFT SKILL DEVELOPMENT

Organized by

CHANDERNAGORE COLLEGE

IN COLLABORATION WITH

GEORGE TELEGRAPH TRAINING INSTITUTE

This is to certify that Smt. ARIPA SARKAR, 20SCBG41, of Chandernagore College has participated in the **SPECIAL CLASSES ON CAREER COUNSELING & SOFT SKILL DEVELOPMENT** on **21.02.2023** as a part of **CAPACITY BUILDING & SKILL ENHANCEMENT PROGRAMMES at Chandernagore College**.

Principal
Chandernagore College

Jt. Director
George Telegraph Training Institute

पश्चिमबङ्ग पश्चिम बंगाल WEST BENGAL 69AB 259399

MEMORANDUM OF UNDERSTANDING (MoU)

This MoU is being executed between **Chandernagore College, Strand Road, Chandannagore, Dist- Hooghly, West Bengal, Pin – 712136** affiliated to The University of Burdwan & **The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , Howrah - 711204**

I. Deliverables of The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah:

The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah will conduct short-term training details for the students of your esteemed college as follows –

Course	TGTTI Suggested Course Name	Duration in Months	Eligibility criteria if any	TGTTI Suggested Course fees for University/ College/ Institute	University/ college share	**Net Course Fee ****	Minimum number of students / candidates required for running the course in each Batch
BA 1st, 2nd, 3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates

	Exam Course						
BCOM 1st , 2nd ,3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative Exam Course	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates
	Tally Prime and TDS Offline & Online (with Tally Certification)	70 Hours	HS Pass	4,800.00	480.00	**4,320.00**	40 Candidates
BSC 1st , 2nd, 3rd Year & Pass out Candidates	Talksmart (Offline)	40 Hours	HS Pass	1,800.00	180.00	**1,620.00**	40 Candidates
	Talksmart Cambridge Content (Online & Offline)	100 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro (Offline)	72 Hours	HS Pass	2,200.00	220.00	**1,980.00**	40 Candidates
	Digipro with Microsoft Content (Offline & Online)	72 Hours	HS Pass	3,500.00	350.00	**3,150.00**	40 Candidates
	Combind Competative Exaam Course	100 Hours	HS Pass	5,300.00	530.00	**4,770.00**	40 Candidates

** Since Chandernagore College is not accepting any share from George Telegraph Training Institute for the conducted courses, the registered students will be exempted from the Original Course fees of GTTI and they will be required only to pay as per the "Net Course Fee" structure furnished for the above registered courses.

II. Deliverables of Chandannagar College:

1. Cooperation to conduct programs on mutually decided date, time and place.
2. Access to the students at Chandernagore College to motivate and interact with them relating to job opportunities and relevant trainings.
3. Provide necessary infrastructure to conduct interactive sessions with the students at Chandernagore College.

IV. Financial arrangements:

a. No financial commitment is required / involved with Chandernagore College to execute the terms and conditions of the MoU.

b. The George Telegraph Training Institute will charge course fees (Onetime Payment) for the training programme from the registered students as provided in the above table.

c. Since Chandernagore College is not accepting any share from George Telegraph Training

19.09.22

19.9.22

Institute for the conducted courses, the registered students will be exempted from the Original Course fees of GTTI and they will be required only to pay as per the "Net Course Fee" structure furnished above for the registered courses

V. Terms and conditions:

- It is mutually understood and agreed by and between Chandernagore College and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah , that the MoU will remain effective for 3 (Three) years. The MoU may be extended or revised after every 3 (Three) years on mutual discussion between the two Institutes viz. Chandernagore College, and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah. Awareness and Seminars would be conducted as and when required, either at Chandernagore College, Chandannagar or The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah or both places, on the basis of mutual consent. The MoU may be extended or revised after every 3 (Three) years on mutual discussion between the two Institutes viz. Chandernagore College, and The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah.
- This MoU shall be governed and construed according to the laws of the country for each participating party. Any dispute will jointly be resolved involving the Principal of Chandernagore College and the The George Telegraph Training Institute, A: 1/3, Belur Road, Liluah, in a spirit of independence, mutual respect, and shared responsibility.
- The MoU may be terminated by either party after giving a notice of six months (180 days) provided that this clause will be operative only if either party violates the terms of MoU or if the parties feel that no useful purpose would be served by further continuing it either due to change in circumstances or change in constituting parties.

VI. Confidentiality:

Both the parties shall maintain in confidence and safeguard all information that the each party may come to know as a result of this Agreement.

XI. Entire Agreement - Execution and Modification

This Agreement wholly cancels, terminates and supersedes any and all previous agreements, negotiations, commitments and writings between the Parties in connection with the subject matter of this Agreement.

19.09.22

Principal
Chandernagore College

Principal
Chandernagore College
Chandernagore

19.9.22

Jt. Director (Operations)
The George Telegraph Training Institute,
A: 1/3, Belur Road, Liluah
Howrah - 711204

Date:
Place: Chandannagar, Hooghly

Witness
1: 19.09.2022
2: 19.09.2022.

Witness:
1: 19.9.22
2: 19.9.22.

Government of West Bengal
OFFICE OF THE PRINCIPAL
Chandernagore College
Formerly College Dupleix
Strand Road, Chandannagar, Hooghly, West Bengal, India, Pin-712136
Website:www.chandernagorecollege.ac.inMail:office@chandernagorecollege.ac.in
Mob:91-7439603177,Tel:91-33-26835290
ISO 90001:2015, ISO 14001:2015 and ISO 50001:2018 Certified Institution

List of Different Academic Departments of Chandernagore College with their different types of E-magazine, Wall magazine and others Digital Creations -

SL. NO.	NAME OF THE DEPARTMENT	TYPE OF WORK
1	ENVIRONMENTAL SCIENCE	WALL MAGAZINE
2	CHEMISTRY	E-WALL MAGAZINES
3	HISTORY	WALL MAGAZINE
4	BENGALI	WALL MAGAZINE
5	ENGLISH	E-REPOSITORIY OF PAINTINGS AND PERFORMANCES
6	GEOGRAPHY	WALL MAGAZINE
7	FRENCH	WALL MAGAZINE: L'AURORE
8	MATHEMATICS	WALL EXHIBITION
9	PHYSICS	WALL MAGAZINE
10	EDUCATION	WALL MAGAZINE
11	COMPUTER SCIENCE	WALL MAGAZINE
12	COMMERCE	WALL MAGAZINE (UTTARAN/ ASCENT)
13	CHEMISTRY	E-MAGAZINE:'EXPLORE' FEBRUARY, 2022
14	CHEMISTRY	E-MAGAZINE: 'SERENDIPITY IN CHEM', FEBRUARY, 2023
15	HISTORY	WALL MAGAZINE: 'SPHULINGA' BIPLAO O CHANDERNAGORE
16	BOTANY	WALL MAGAZINE: 'GLORIOSA'
17	POLITICAL SCIENCE	E-MAGAZINE: DRISHTIKON

Principal
Chandernagore College

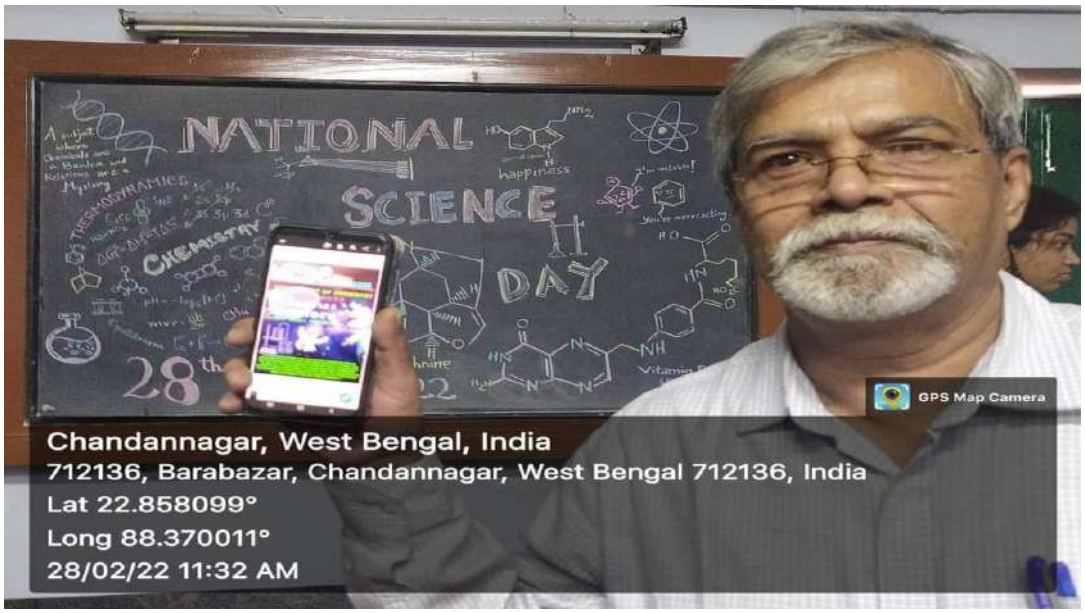
E-WALL, WALL MAGAZINES AND OTHER DIGITAL CREATIONS' REPOSITORIES OF CHANDERNAGORE COLLEGE

1. DEPARTMENT OF ENVIRONMENTAL SCIENCE WALL MAGAZINE


WORLD ENVIRONMENT DAY '23
BEAT PLASTIC POLLUTION
GPS Map Camera
Chandannagar, West Bengal, India
V959+2RX, Strand Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.857498°
Long 88.369329°
05/06/23 01:37 PM GMT +05:30
Google


WORLD ENVIRONMENT DAY '23
BEAT PLASTIC POLLUTION
GPS Map Camera
Chandannagar, West Bengal, India
V959+2RX, Strand Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.857408°
Long 88.369388°
05/06/23 01:33 PM GMT +05:30
Google

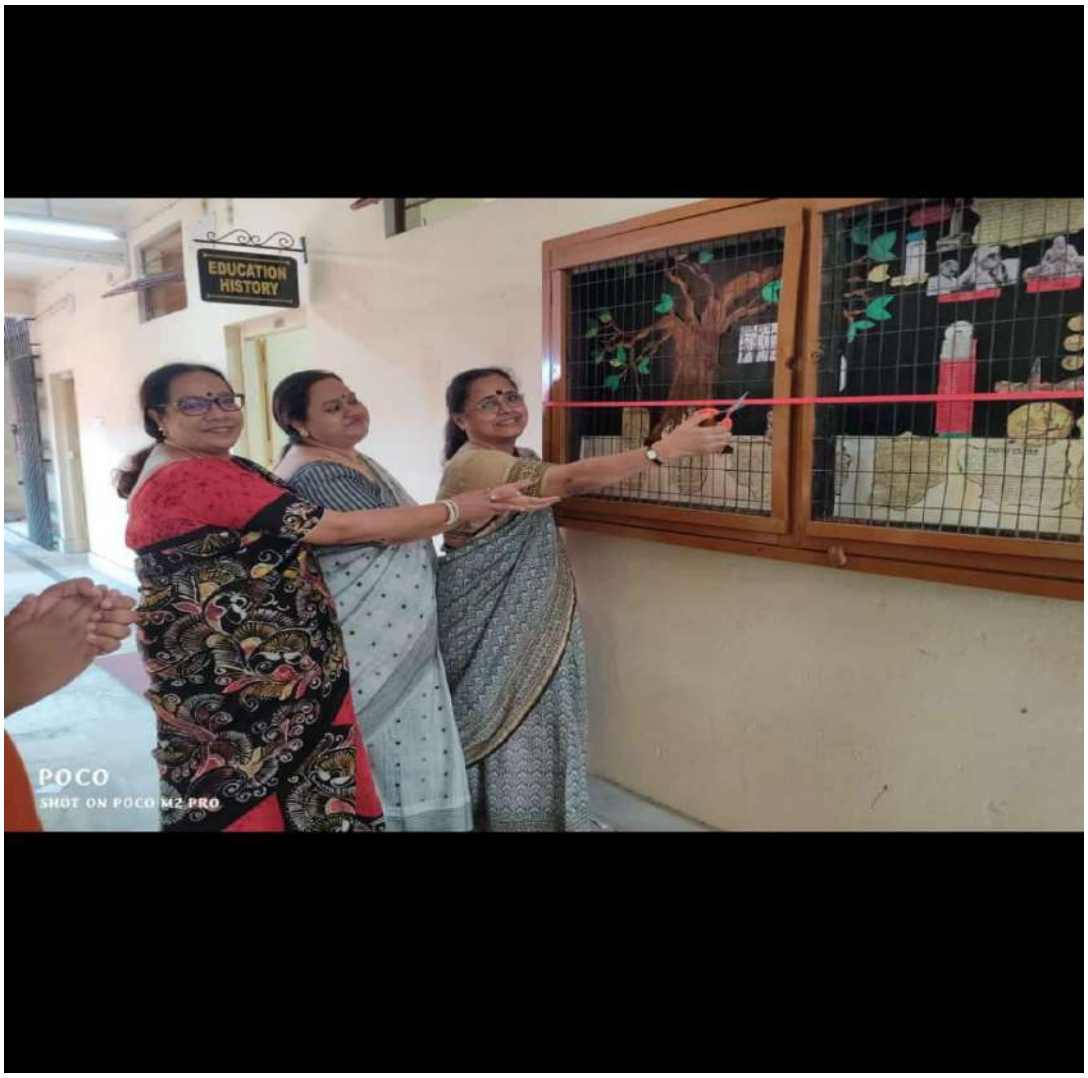
2. DEPARTMENT OF CHEMISTRY E-WALL MAGAZINES



Inauguration of Department of Chemistry Wall Magazine 2022 : 28.02.2022 (Academic Year 2021-2022).
DETAILED E-MAGAZINE ATTACHED HEREWITH.

Inauguration of Department of Chemistry Wall Magazine 2023 : 28.02.2023 (Academic Year 2022-2023).
DETAILED E-MAGAZINE ATTACHED HEREWITH.

3. DEPARTMENT OF HISTORY WALL MAGAZINE



WEB LINK OF THE HISTORY DEPARTMENT E-INITIATIVE CONTAINING THE DETAILS OF VARIOUS FIELD TRIPS OF THE HISTORY DEPARTMENT AND OTHER ENDEVOURS: https://spectrumccdhofficial.wordpress.com/

4. DEPARTMENT OF BENGALI WALL MAGAZINE


ডেঙ্গু রোগের উপসর্গ
চোখে ব্যাথা
জ্বর
পেশিতে ব্যাথা
মাথা ব্যাথা
হাড়ের ব্যাথা
বমি ভাব
অস্থিসন্ধিতে ব্যাথা
র‍্যাশ ওঠা
TECNO
POVA


ডেঙ্গুর প্রতিকার
USE ME

5. DEPARTMENT OF ENGLISH E-REPOSITORY

Instagram account of English department showcasing students paintings and performances - https://instagram.com/ccde_creatives?igshid=YmMyMTA2M2Y=

SOME SELECTED PAINTINGS HAVE BEEN ATTACHED HEREWITH

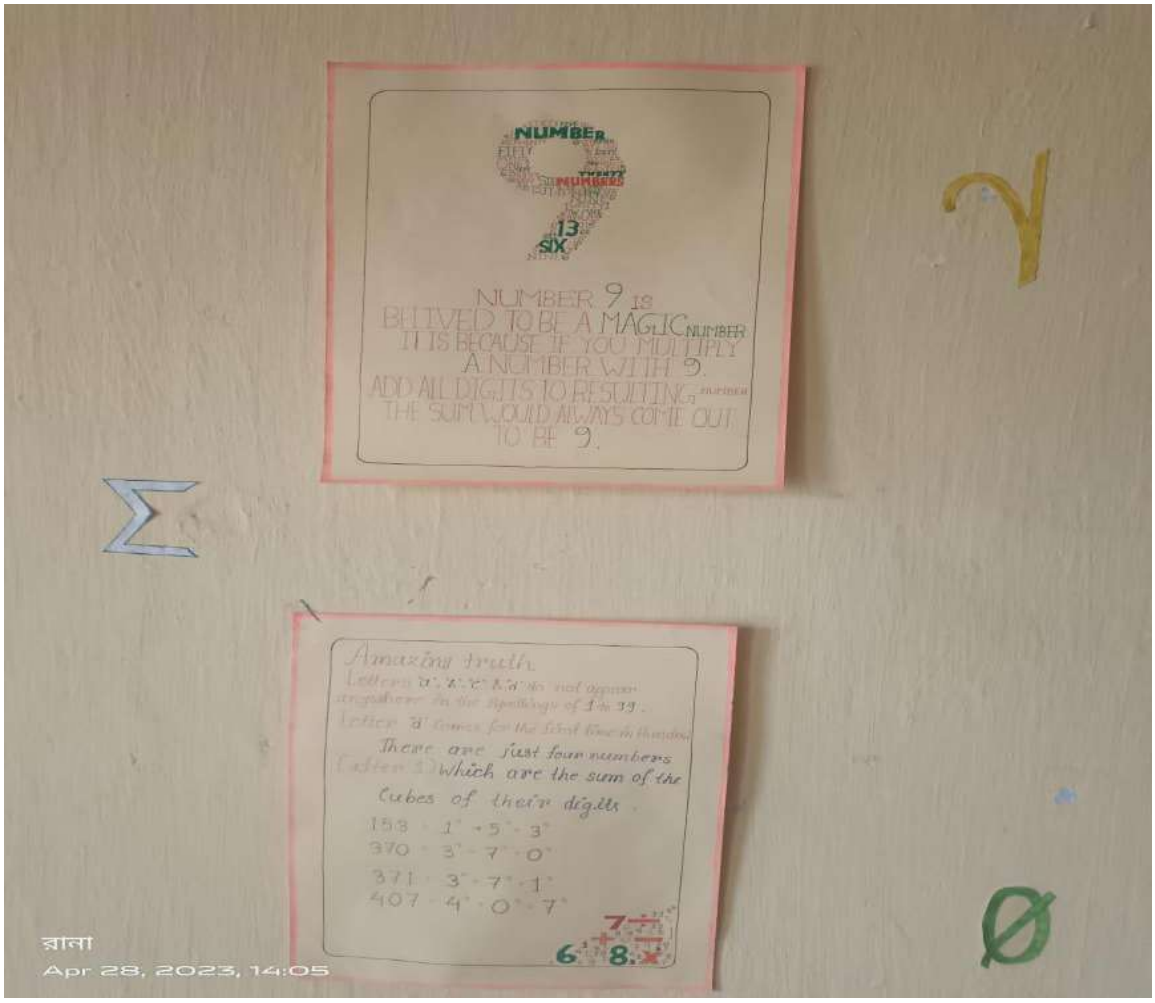
6. DEPARTMENT OF GEOGRAPHY WALL MAGAZINE

7. DEPARTMENT OF FRENCH WALL MAGAZINE

THE WALL MAGAZINE HAS BEEN ATTACHED HEREWITH

8. DEPARTMENT OF MATHEMATICS WALL EXHIBITS


VIVIANI'S THEOREM
2-Dimensional Geometric Shapes
RECTANGLE
TRIANGLE
SQUARE
CIRCLE
RHOMBUS
OVAL
राना
Apr 28, 2023, 14:05


NUMBER
13
SIX
NUMBER 9 IS BELIVED TO BE A MAGIC NUMBER IT IS BECAUSE IF YOU MULTIPLY A NUMBER WITH 9 ADD ALL DIGITS TO RESULTING NUMBER THE SUM WOULD ALWAYS COME OUT TO BE 9.
Amazing Truth
There are just four numbers which are the sum of the Cubes of their digits.
153 = 1³+5³+3³
370 = 3³+7³+0³
371 = 3³+7³+1³
407 = 4³+0³+7³
राना
Apr 28, 2023, 14:05

THE KÖNIGSBERG BRIDGE PROBLEM

Current Map of Kaliningrad (Previously Königsberg)

History :

Carl Gottlieb Ehler, a mathematician who became the mayor of Königsberg. He had a question in his mind that 'Which route would allow someone to cross all 7 bridges without crossing any of them more than once?'

Carl wrote a letter to the famous Swiss mathematician Leonhard Euler for help. At first Euler dismissed the problem as it nothing to do with mathematics. The more he thought about it, he just wondered. At last, in 26th August 1735, he invented a new type of geometry or specially geometry of positions, now known as Graph Theory.

Degree of a Vertex in a Graph :

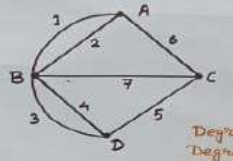
The number of edges incident on a vertex, with self-loop counted twice, is called the degree of that vertex.

Closed Walk :

In a closed walk, any edge cannot appear (be covered or traverse) more than once with starting and ending point be same.

Euler Graph :

If some closed walk in a graph contains all the edges of the graph, then the walk is called a Euler Line and the graph is called a Euler Graph. Also, for a Euler Graph, it can be proved that all vertices of that graph are of even degree and Conversely



Degree (A) = 3
Degree (B) = 5
Degree (C) = 3
Degree (D) = 3

Diagram Using Graph Theory

Conclusion of the Königsberg Bridge Problem :

Note that, in this problem, not all vertices are of even degree. Hence, it is not a Euler Graph. Thus, it is not possible to walk over each of the seven bridges exactly once and return to the starting point.

Current Situation :

During World War II, two of the german bridges over the Pregel river are destroyed by bombing of Soviet Airforce in 26th and 27th August 1944. With this incident, the occured problem was solved. Today, there is no Königsberg city. but the riddle of seven bridges makes it famous in the field of mathematics. One can find the proper map of Königsberg by the name of Kaliningrad, a Russian city.

Leonhard Euler

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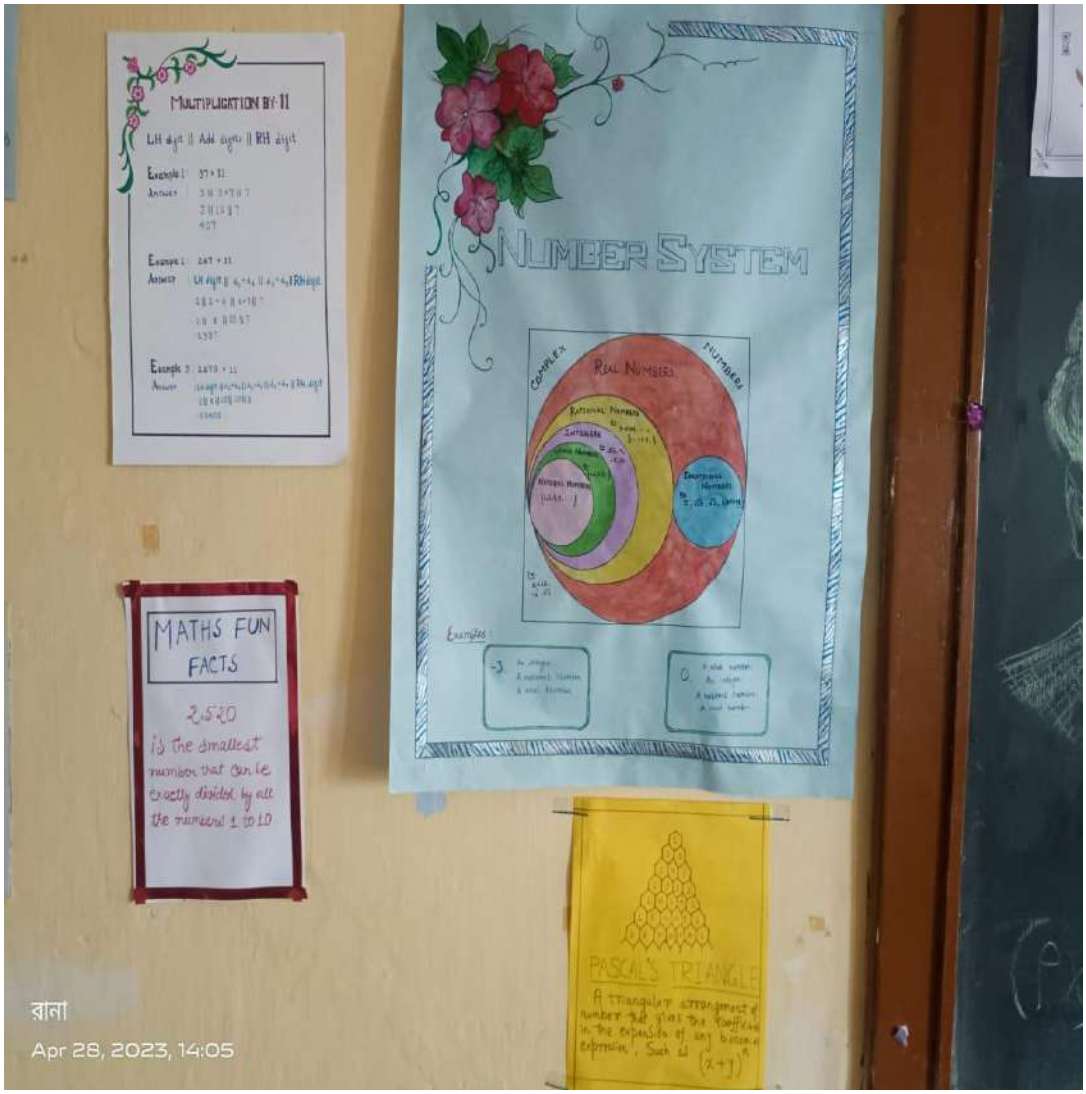
Apr 28, 2023, 15:45



রানা

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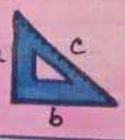
PYTHAGORAS

Pythagoras was Greek philosopher, mathematician and founder of pythagoreaism

Phythagoras was born in C. 570 BC (Samo) and died in C. 495 BC (Metapontum).

He and his disciples found pythgoras theorem. The square of the hypotenuse of a right triangle is equal to the sum of its other two sides.



$a^2+b^2=c^2$

Phythagoras is my inspiration beacuse of his Contributions to math and music, in particular his work with number and his discovery of harmonious string length His various Contributions are in Continual use by researches and Composers.

Pythagoras also made major Contribution in asthonomy and string theory. He observed that when you apply whole number to string lengths. it created a distinct harmonious note that he adapted to other instruments.

"there is geometry in the humming of the strings, there is music in the spacing of the spheres."

CONTRIBUTION OF NEWTON IN MATHEMATICS

INTRODUCTION

Sir Isaac Newton (25 December 1642–20 March 1726) was an English mathematician, physicist, astronomer, alchemist, theologian and author widely recognised as one of the greatest mathematicians and physicists of all time and among the most influential Scientists. His book MATHEMATICAL PRINCIPLES OF NATURAL PHILOSOPHY, first published in 1687, established classical mechanics. Newton also made seminal contributions to optics and shares credit with German mathematician Gottfried Wilhelm Leibniz for developing infinitesimal calculus. In addition to his work on calculus, as a mathematician Newton contributed to the study of power series, generalised the Binomial Theorem to non-integer exponents, developed a method for approximating the roots of a function and classified most of the Cubic plane curves. Newton was a fellow of 'Trinity College' and the second Lucasian Professor of Mathematics at the University of Cambridge. Here are some of Contribution of Newton in mathematics :-

ISAAC NEWTON
1642-1726

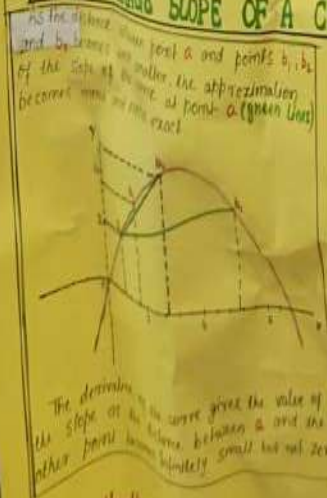
GENERALIZED BINOMIAL THEOREM

As Newton is best known for his Contributions in Calculus but he has also Contributed in Algebra. He is Credited with the Generalized Binomial Theorem. The binomial theorem describes the algebraic expansion of powers of a binomial. Around 1665, Isaac Newton generalized the binomial theorem to allow real exponents other than. In this generalization the finite sum is replaced by an infinite Series. The theorem says:

For any $n \in R$,

$$(1+x)^n = \sum_{r=0}^{\infty} \binom{n}{r} x^r$$

THE AVERAGE SLOPE OF A CURVE



As the distance between points a and points b_1, b_2 and b_3 becomes smaller, the approximation of the slope of the curve at point a (green line) becomes more and more exact.

The derivative of the curve gives the value of the slope of the distance between a and the other point becomes infinitely small but not zero.

Initially the problem faced by Newton was that the slope of the curve was continually changing and there was no method to give the exact slope at any point on the curve. ie the slope of a tangent line to the curve at that point.

Without going into too much Complication Newton Calculated a derivative function $f'(x)$ which gives the slope at any point of a function $f(x)$. This process of Calculating the slope is Called **differential Calculus** or in Newton's terminology, the "Method of Fluxions".

He called the instantaneous rate of change at a particular point on a Curve the "Fluxion" and the changing values of x and $f(x)$ the Fluents.

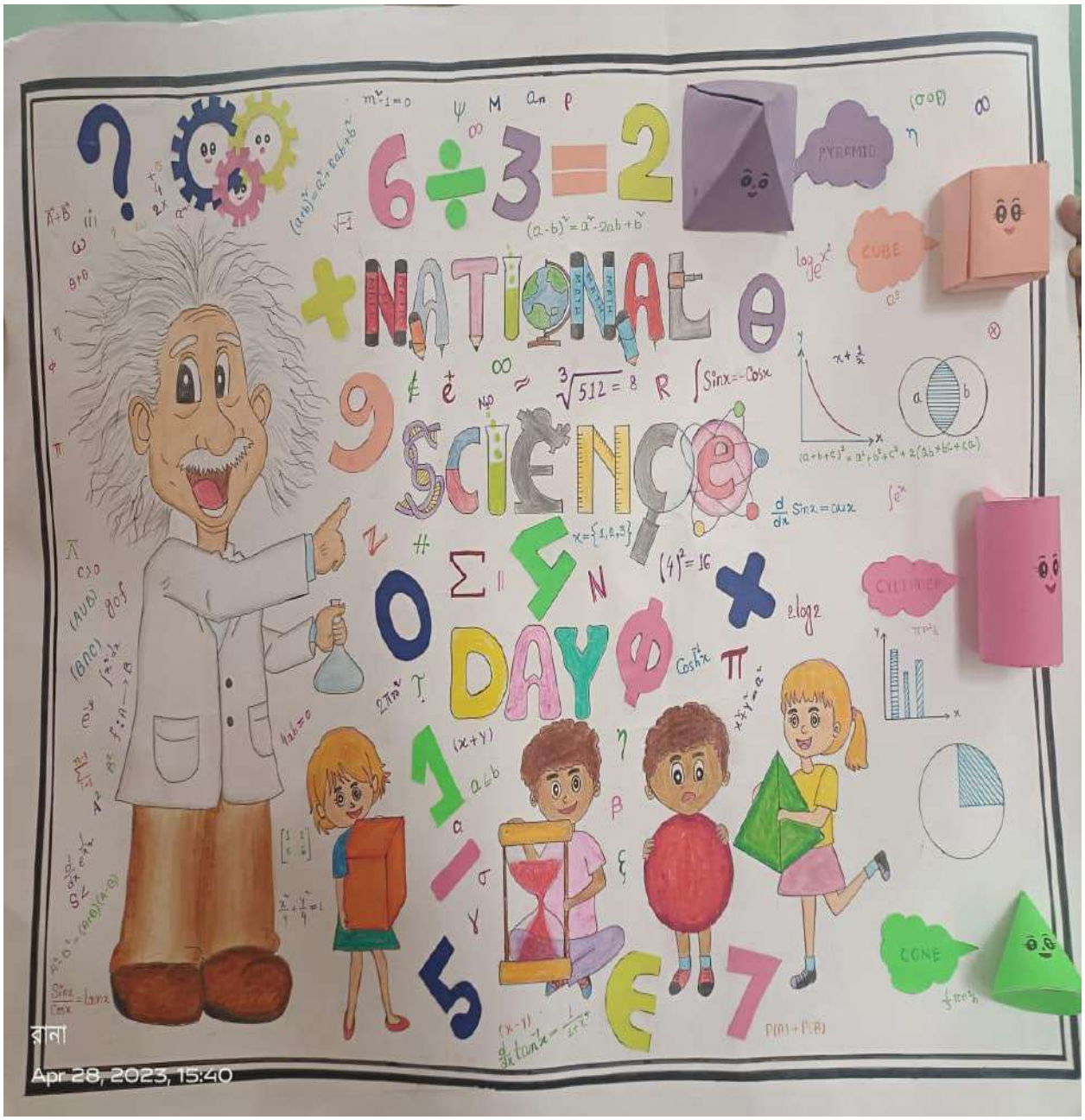
NEWTON-RAPHSON METHOD

We know Simple formulas for finding the roots of linear and quadratic equations and there are also more complicated formulae for cubic and quartic equations.

But, The Newton-Raphson Method is a method for approximating the roots of polynomial equation of any order. The method works for any equation Polynomial or not as long as it is differentiable in a desired interval.

In this method let $f(x)$ be a differentiable function. Select a point x_0 based on a first approximation to the root, close to the function's root. To approximate the root we then recursively Calculate Using-

$f(x_0)$



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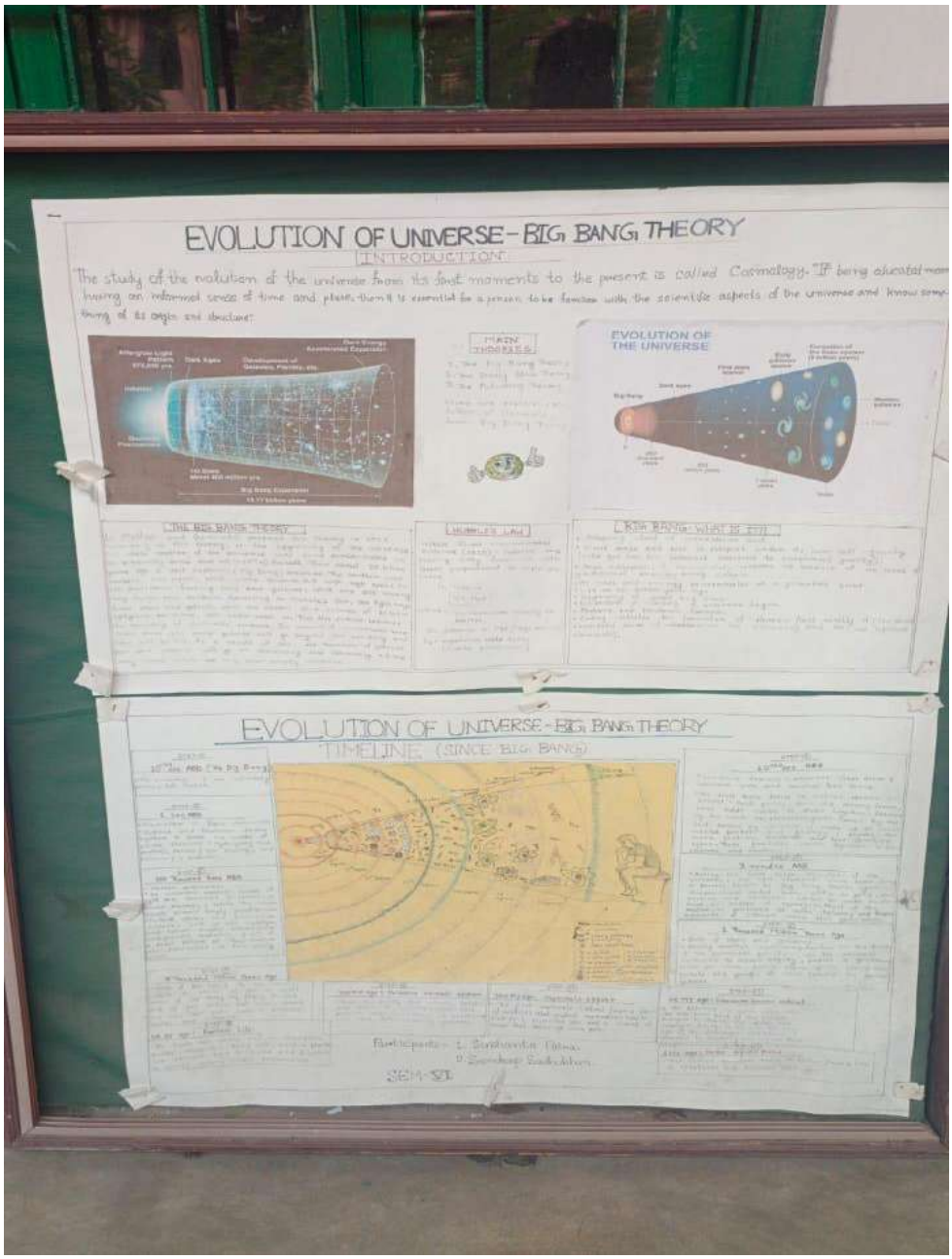
9. DEPARTMENT OF PHYSICS



10. DEPARTMENT OF ZOOLOGY


10 RAREST SNAKES IN THE WORLD
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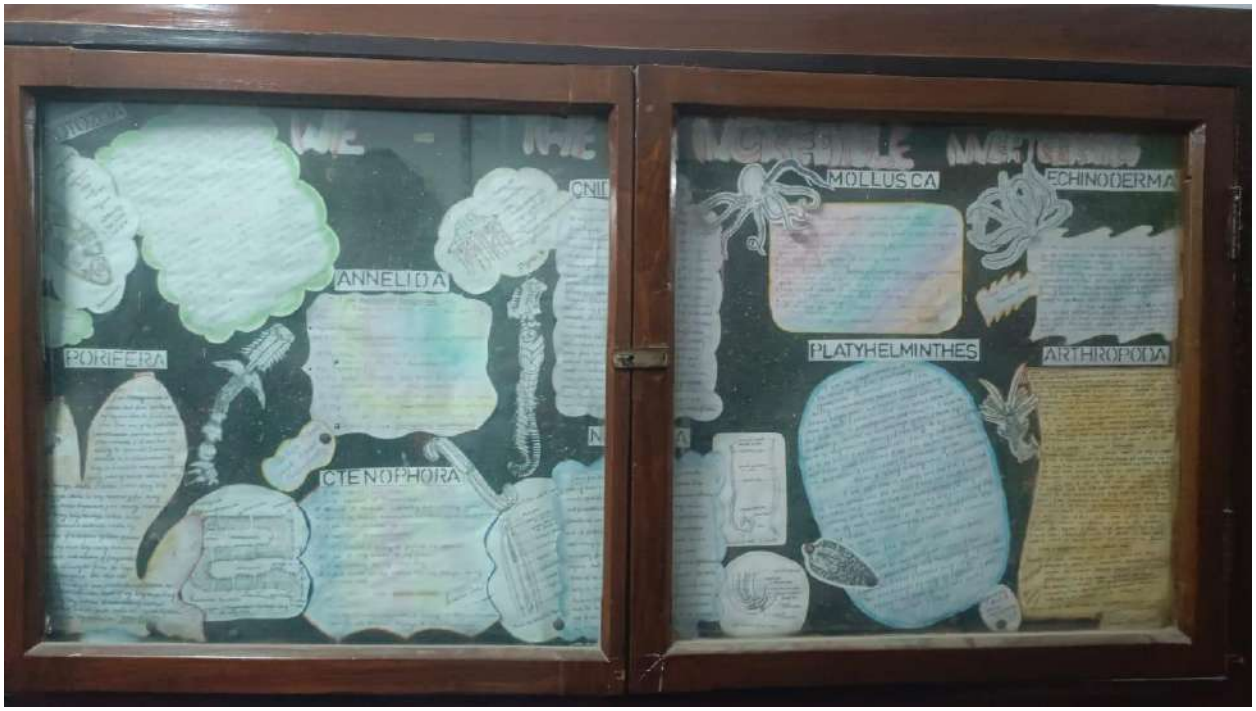
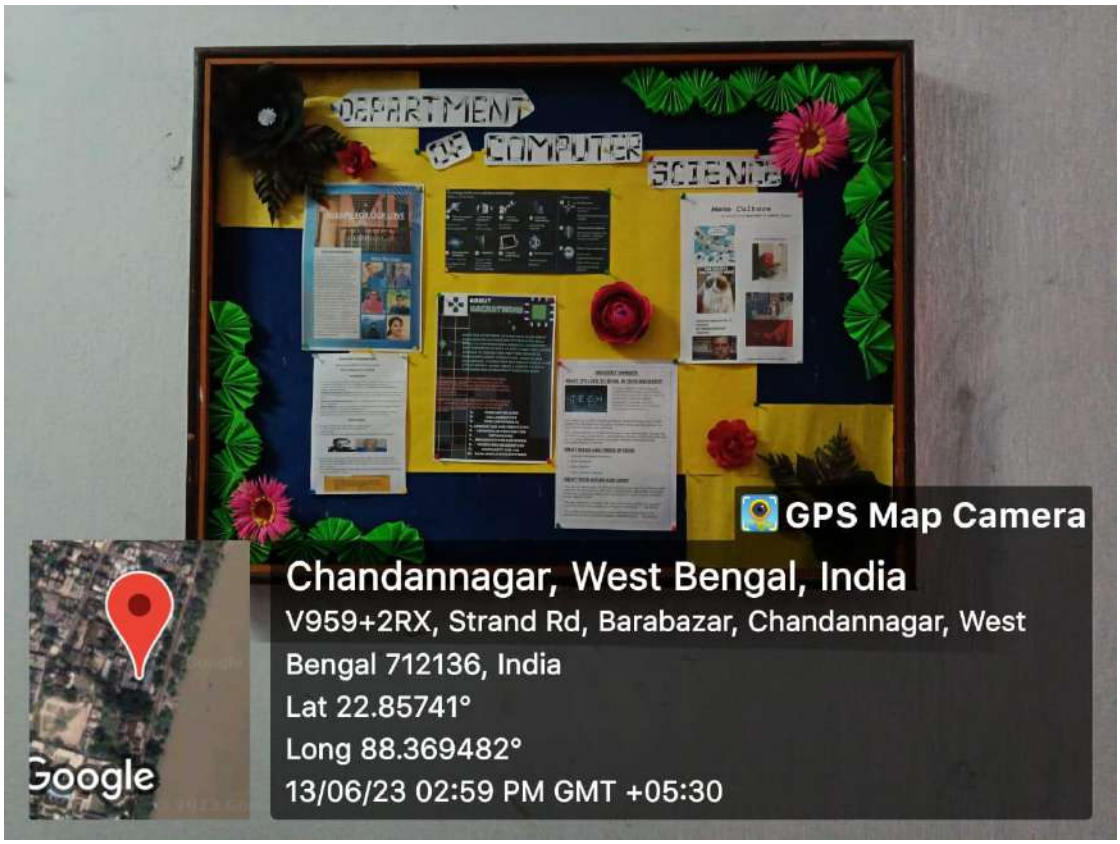

ANNELIDA
PORIFERA
CTENOPHORA
MOLLUSCA
ECHINODERMA
PLATYHELMINTHES
ARTHROPODA

11. DEPARTMENT OF EDUCATION

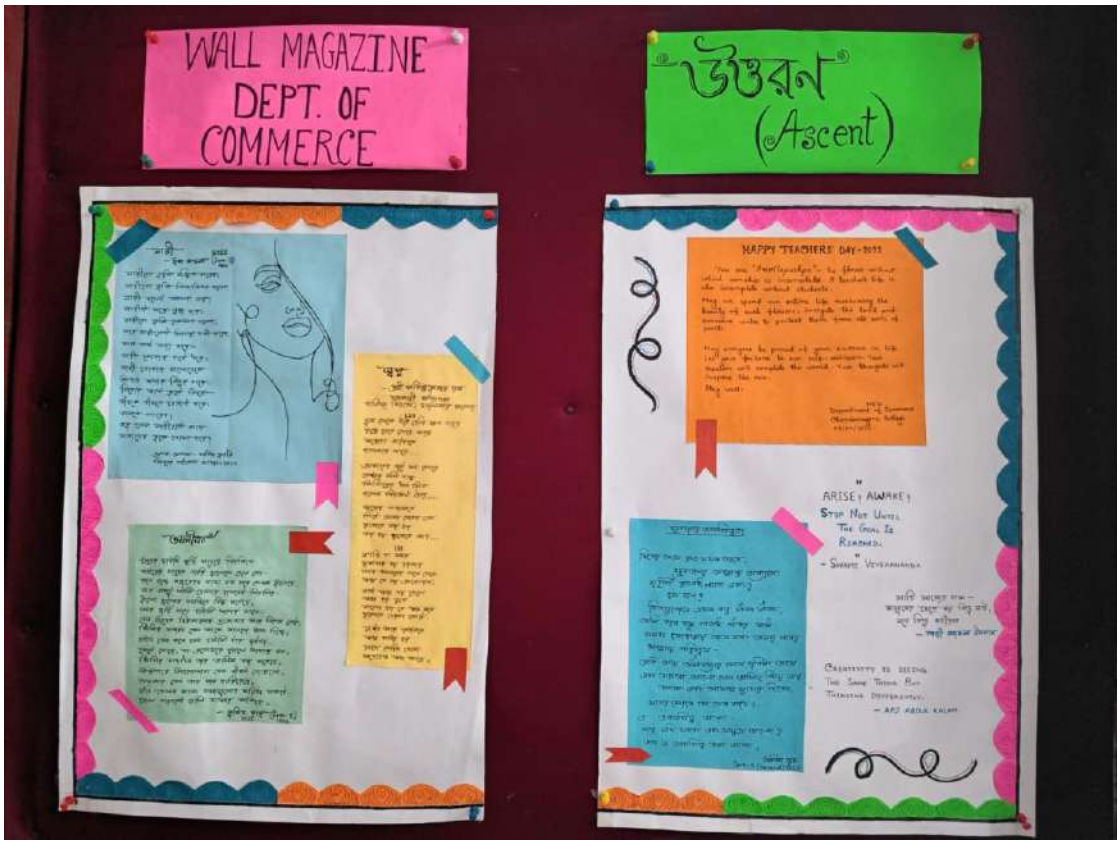

আগমনী
কলকাতার দুর্গাপূজা
UNESCO থেকে প্রাপ্ত পুরস্কার
পতিতালয়ের মাটি ছাড়া তৈরি হয় না দুর্গা প্রতিমা, কেন জানেন?

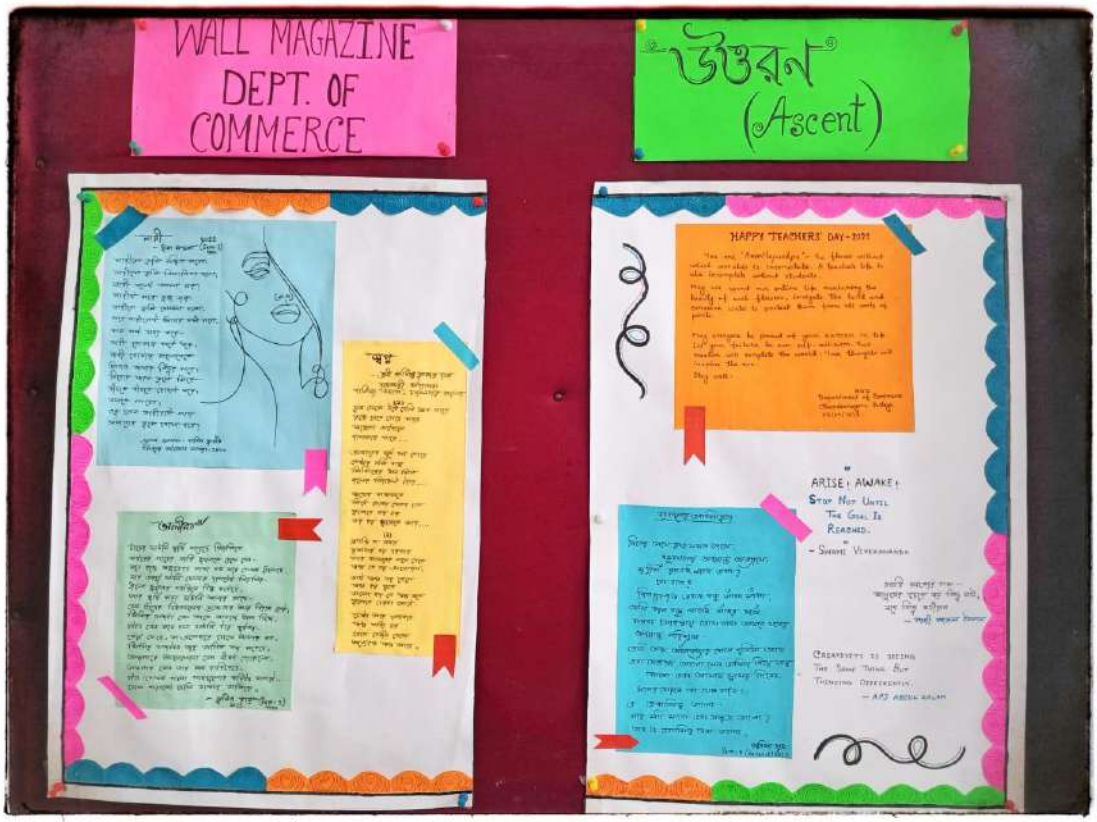
12. DEPARTMENT OF COMPUTER SCIENCE


DEPARTMENT
OF COMPUTER
SCIENCE
GPS Map Camera
Chandannagar, West Bengal, India
V959+2RX, Strand Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.85741°
Long 88.369482°
13/06/23 02:59 PM GMT +05:30
Google


DEPARTMENT
OF COMPUTER
SCIENCE

13. DEPARTMENT OF COMMERCE




WALL MAGAZINE
DEPT. OF
COMMERCE
উত্তরণ
(Ascent)
HAPPY TEACHERS' DAY - 2021
ARISE! AWAKE!
STOP NOT UNTIL
THE GOAL IS
REACHED.
- SWAMI VIVEKANANDA

CHANDERNAGORE COLLEGE

DEPARTMENT OF CHEMISTRY

PRESENTS

E - MAGAZINE

"explore"

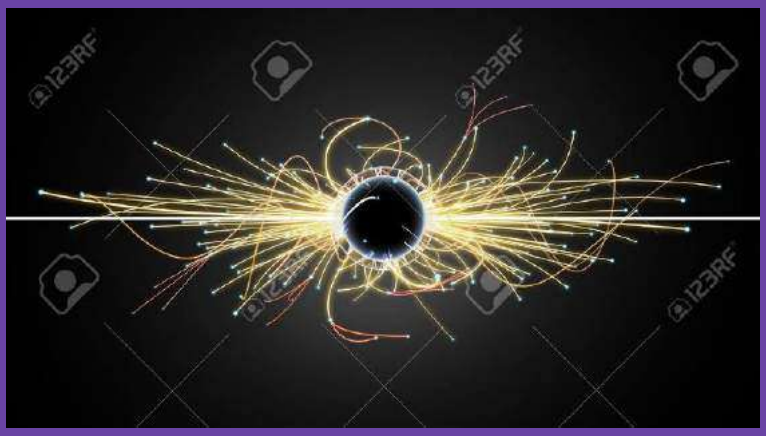
VOLUME 1 ISSUE 1 FEBRUARY, 2022

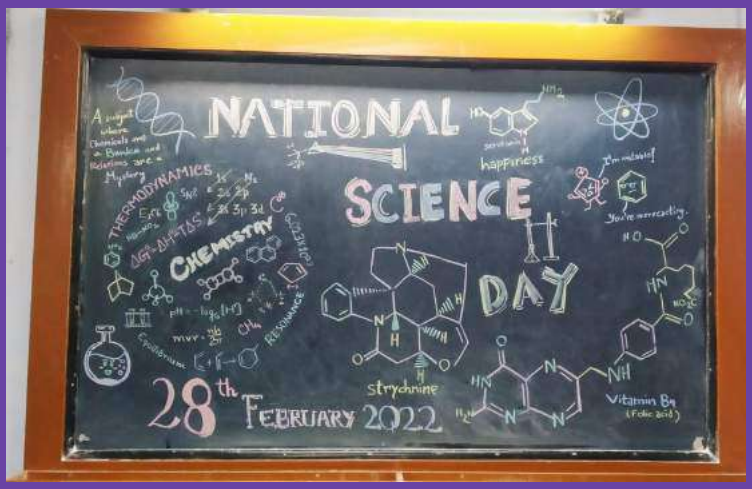
A STUDENTS' PUBLICATION

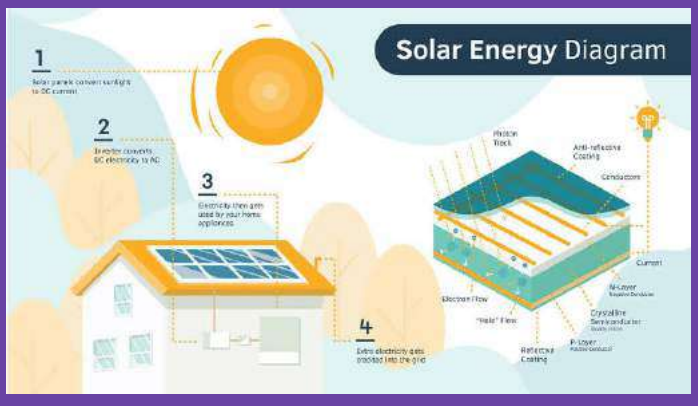
"DO YOU ALSO WONDER HOW THE UNIVERSE WORKS OR HOW DO KNUCKLES POP? DO YOU ALSO QUESTION EVERYTHING AROUND YOU AND TRY TO KNOW ITS SCIENTIFIC REASONS? THEN THIS MAGAZINE IS FOR YOU. IT DIGS INTO THE VARIOUS MYSTERIES AROUND OR BEYOND US AND INTERESTINGLY EXPLAINS THEM. THE AMALGAMATION OF WRITING ON VARIOUS TOPICS VIA GRAPHICS AND VISUALS WILL KEEP YOU HOOKED AND FEED YOUR CURIOSITY."

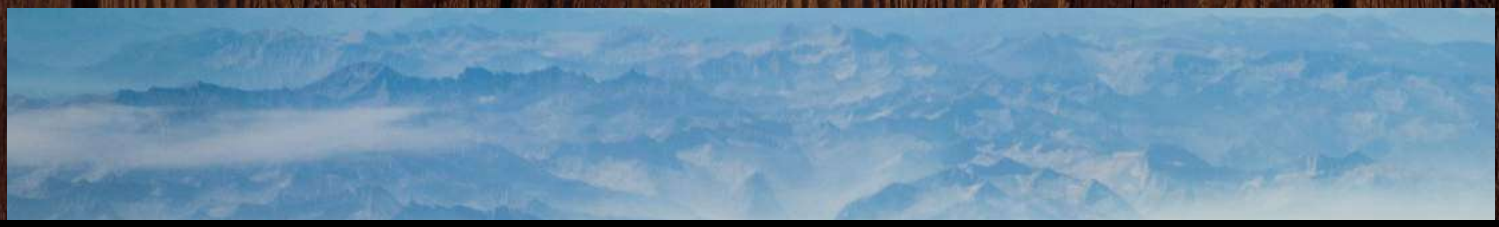
EXPLORE

CONTENTS









EXPLORING SCIENCE

OUR JOURNEY TO CELEBRATE THE MAGIC OF SCIENCE

Editor's Note

ON THE OCCASION OF NATIONAL SCIENCE DAY, OUR DEPARTMENT TAKES INITIATIVE TO CELEBRATE THIS PROGRAMME. TO OBSERVE THIS DAY WE ARRANGE AN E- MAGAZINE, ALONG WITH POSTER PRESENTATIONS AND QUIZ COMPETITIONS AND VARIOUS OTHERS SHORT PROGRAMME.

THIS E-MAGAZINE IS PUBLISHED AFTER HARD WORK BY ALL OF OUR DEPARTMENT DAY BY DAY.

THIS E-MAGAZINE "EXPLORE" MAKES YOU THINK FOR SCIENCE. YOU MUST BE AMAZED BY EVERY CONTENTS. THE AMALGAMATION OF WRITING ON VARIOUS TOPICS BY USING VISUALS, GRAPHICS WILL KEEP YOU HOOKED UP AND FEED YOUR CURIOSITY.

Special thanks to everyone who involved in this magazine from Day 1. Thanks to all our teachers for their supports and suggestions. Thanks again for all supports to all of you.

A NOTE BY- BINOY CHANDRA DEY

Our Team

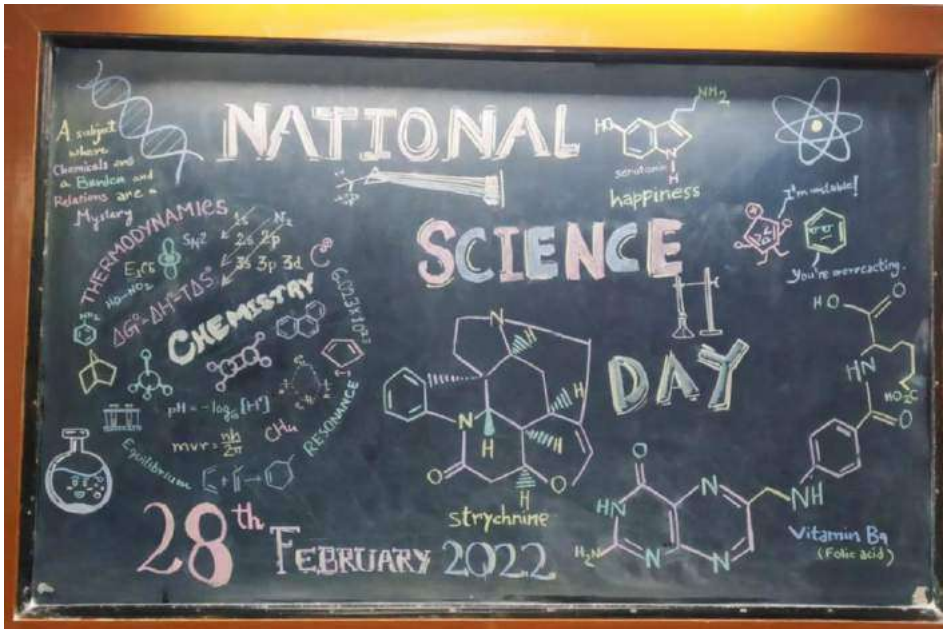
Graphic designing, composing, Cover Designing, Editing- BINOY

Initiative members - BINOY, BITHIKA, MUGDHA, SNEHA, SOURYA, SUBHAM, SUMITRA (students of sem6 2022)

NATIONAL SCIENCE DAY AND THE C.V. RAMAN

AN ARTICLE BY: BINOY CHANDRA DEY

28th February is celebrated as National Science Day (NSD) in India. NSD is celebrated to commemorate discovery of the 'Raman Effect', which led to **Sir C.V. Raman** winning the Noble Prize. In 1986, the National Council for Science and Technology Communication (NCSTC) asked the Government of India to designate 28 February as National Science Day which the then Govt. of India accepted and declared the day as National Science Day in 1986. The first National Science Day was celebrated on February 28, 1987.



(BOARD WORK BY RAJDIP SARKAR, SNEHA DAS, PRADIPTA CHAKRABORTY, SAGNIK GHOSH, SUMITRA MURMU FOR NATIONAL SCIENCE DAY PROGRAMME AT OUR DEPARTMENT)

Raman Effect is a phenomenon in spectroscopy discovered by the eminent physicist Sir Chandrasekhara Venkata Raman in 1928. After two years in 1930, he got Nobel Prize for this remarkable discovery and this was the first

Nobel Prize for India in the field of Science. while working in the laboratory of the Indian Association for the Cultivation of Science, Kolkata.
Raman Effect is a change in the wavelength of light that occurs when a light beam is deflected by molecules. When a beam of light traverses a dust-free, transparent sample of a chemical compound, a small fraction of the light emerges in directions other than that of the incident (incoming) beam. Most of this scattered light is of unchanged wavelength. A small part, however, has wavelengths different from that of the incident light; its presence is a result of the Raman Effect.

The theme of National Science Day 2022 is 'Integrated Approach in Science and Technology for a Sustainable Future'.

We live in a culture where we may see two types of individuals. A group of people who believe in things beyond science and follow a spiritual path. Others thrive on making constant advances in science and technology. People who believe in technological miracles enjoy celebrating National Science Day in the same manner as they love to celebrate their costumes and religious festivals. Science has pushed us to our limits. Everything around us is a product of science. The National Science Day is for those who believe in science, scientists, the younger ones who work hard to learn about science and technology, and those who enjoy scientific discoveries such as the farming community of India.

It's a waste of time to live without science! Do miracles happen? It would be a separate issue, but if you believe in science, you would always consider the logic behind the decision. We have been fortunate enough to see some amazing scientific studies, breakthroughs, and technologies.

WISH FOR A VERY HAPPY SCIENCE DAY!

FUEL FOR AUTOMOBILE

AN ARTICLE BY: BITHIKA ROY

INTRODUCTION:

We may have here about gasoline, LPG, CNG and more. These are the types of FUELS that help us continue our long DRIVE. Fueling of vehicles with correct oil ensures our vehicles optimum performance.

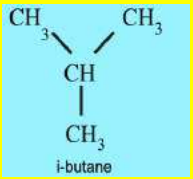
Top six types of vehicle Fuels used in India

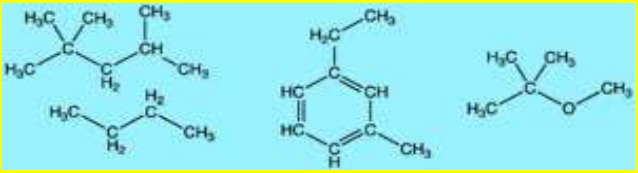
- **PETROL**

Petrol, also known as gasoline, is one of the most common fuel types for a vehicle. It's transpirant and is derived via fractional distillation of petroleum. It is used in spark- ignited combustion engines and is available in multiple variants.

Chemical Analysis

Elemental composition of petroleum:- 83 to 87% hydrogen, 10 to 14 % Nitrogen, A typical gasoline (octane C8H18) mixture contains about 150 different hydrocarbons including butane, pentane, iso pentane and BTEX(Benzene, ethylbenzene, toluene and xylenes) compound.





gasoline

Extraction of petrol

The first part of refining crude oil is to heat it until it boils. The boiling liquid is separated into different liquids and gases in a distillation column. These liquids are used to make petrol, paraffin, diesel fuel etc. Crude oil is a mixture of different chemicals called hydrocarbons.

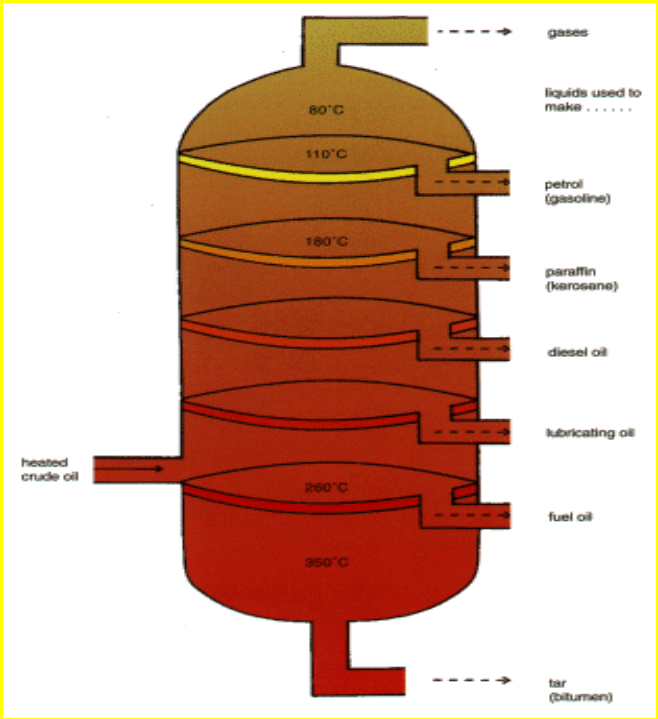


Fig: 1

How to detect Purity of petrol?
on putting a few drops of petrol on the paper, If the petrol is pure, it will evaporate without leaving any stain. However, if the petrol is adulterated, it will leave some stains in paper.

How to check fuel at filling station?
Filter paper Test
Put 2 drops of petrol from the dispensing pump on the filter paper. If petrol is adulterated, it will leave a stain on the filter paper in 5 minutes, because petrol evaporates faster.
Density Test
Check the density and match it with reference density available in the records maintained by the dealer. Permissible variation from reference density: +/-3.0 Kg/m3 at 15?c. Apparatus are available with the dealer.
Quantity Check
You may verify the accuracy of the dispensing pump with a 5 liters calibrated measure available with the dealer.

- DIESEL

Describe the current scenario diesel consumption witnessed recovery with a 27% rise. This speaks volumes about the popularity of the fuel. Like Petrol, diesel is also obtained from the fractional distillation of Petroleum oil that is specially tailored for a diesel engine.
Chemical Analysis
Average chemical formula of diesel is C12H23. It consists of approximately 75% aliphatic hydrocarbons(C10H20- C15H28) and about 25% aromatic hydrocarbons (e.g.- benzene, styrene). The typical atomic mass conc. are about 86% C,H and a minor fraction of sulphur depending on crude oil source and cleaning quality.

Extraction of Diesel
It is produced from the fractional distillation of crude oil between 200 and 350 °C (392 and 662 °F) at atmospheric pressure.(see Fig:1)

- **COMPRESSED NATURAL GAS (CNG)**

CNG composises compressed methane less than 1% by volume. It's one of the emerging fuel types for a car in urban areas with the primary objective to reduce pollution.
Chemical Analysis
The main component of CNG is methane (95%), compressed to less than 1% volume occupied at standard atmospheric pressure. Approximately 4% nitrogen and ethane and 1% CO2 and propane are also present.

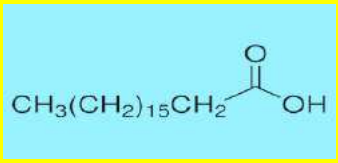
Compressed natural gas (CNG) is an alternative fuel to conventional transportation fuels, and is known for its low greenhouse gas emissions]. CNG produced from biogas, named Bio-CNG, is similar to regular CNG in terms of vehicle fuel economy and emissions. Conversion of biogas to Bio-CNG requires removal of impurities such as water, N2, O2, H2S, NH3 and CO2 from raw biogas. Bio-CNG is then made by compressing the purified biogas (>97% CH4, <2% O2) at a pressure of 3000–3600 psi (20–25 MPa). Bio-CNG requires less than 1% of the volume that it occupies at standard atmospheric pressure.

- **BIO-DIESEL**

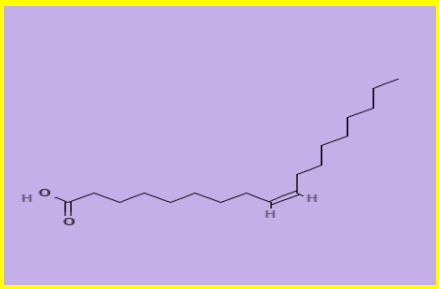
The mixture of diesel with other oils produces Biodiesel converting vegetable oil, animal oil fat and waste cooking oil into Biodiesel is known as Trans esterIfication. Since it can situates natural ingredients, it is one of the best alternatives for biofuel.
Chemical Analysis

The composition of Biodiesel is mostly triglycerides that are classified as eaters. The basic Biodiesel chemical formula is C17H34O2,veith the ester group, - CO2, CH3 at the long carbon chain. Biodiesel Composition:-

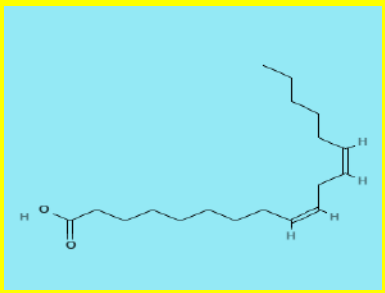
1. Stearic Acid(octadecanoic acid C18H36O2)



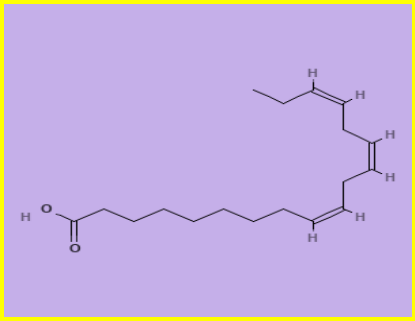
2. Oleic Acid(cis-9-octadecenoic acid C18H34O2)

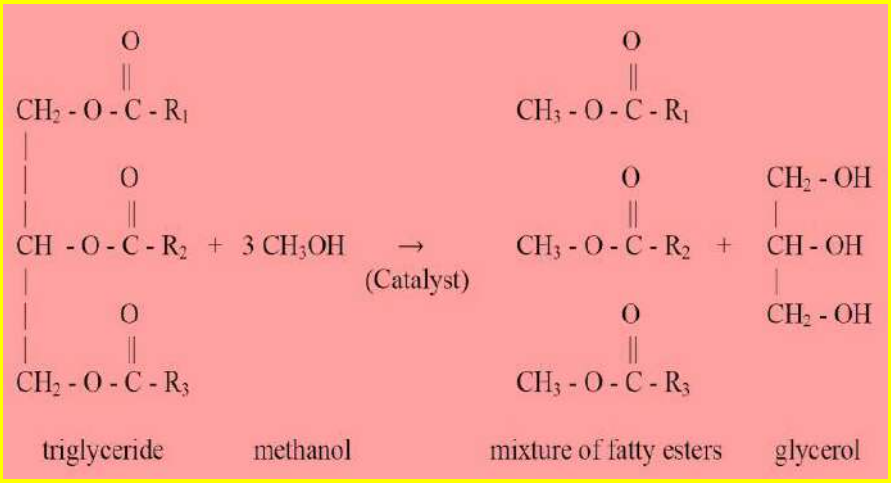


3. Linoleic Acid(cis, cis-9,12-Octadecadienoic acid C18H32O2)



4. Linolenic Acid((9Z,12Z,15Z)-octadeca-9,12,15-trienoic acid, C18H30O2)





Trans esterification to biodiesel

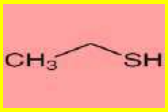
• LIQUEFIED PETROLEUM GAS (LPG)

LPG is obtained from crude oil and natural gas. It constitutes hydrocarbon gases such as propane and butane.

Chemical Analysis .

LPG is composed of hydrocarbons containing. three or four carbon atoms. The normal components of LPG thus are, propane (C_3H_8) and butane (C_4H_{10}).

DO YOU KNOW LPG is odorless in natural state?



(Ethyl mercaptan)

A chemical compound called Ethyl mercaptan
is added at the time of production to give the now familiar fuel smell to easy detection of gas in the air.

- **ETHANOL OR METHANOL**

It is an alcohol with a high octane number. It is a renewable and biodegradable energy source and does not emit a significant amount of CO2 and nitrogen dioxide. Presently India uses up to 10% of ethanol - blended fuel. The India govt. is planning to increase ethanol production as petrol and diesel prices reach new heights every day.

Chemical Analysis

Ethanol (Ethyl alcohol, CH3CH2OH) is one of a group of chemical compounds (alcohols) with molecules that condam-OH group. Ethanol is produced through the formation of agriculture products such as sugarcane, corn etc.

OCTANE NUMBER:

The knocking characteristics are described by the antiknock value known as octane number . It is defined as the percentage of isooctane present in a standard mixture of isooctane and n-heptane which knocks at same compression as the petrol being tested.

Lower knocking tendency Higher the octane number
Better the efficiency of the fuel

Isooctane - compound having least knocking, and assigned octane number of 100

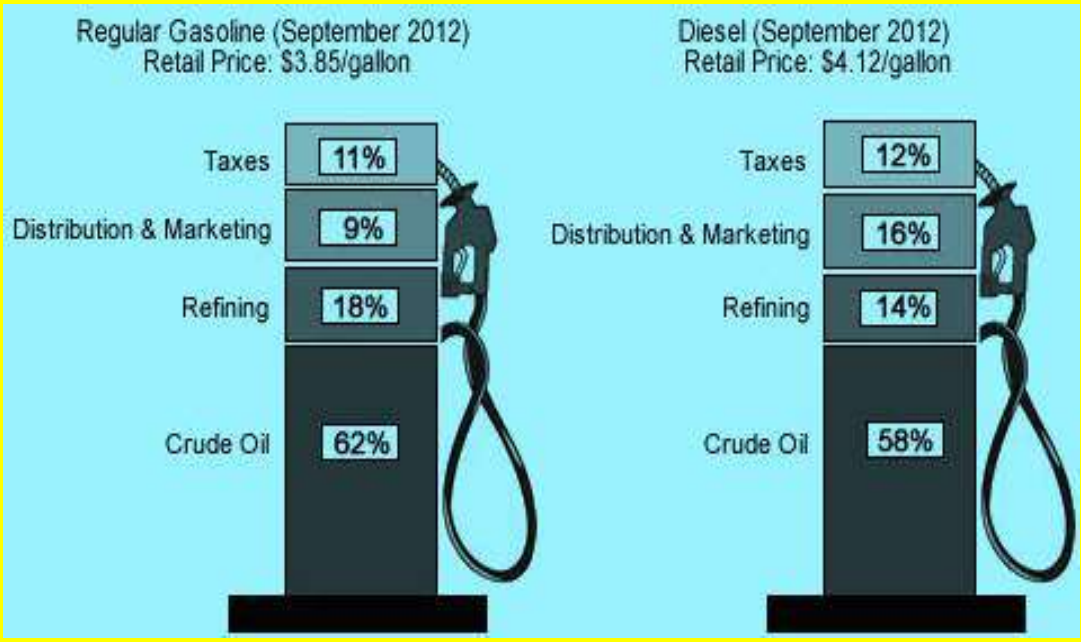
n-heptane compound having highest knocking tendency and Octane number of 0

…….

THE CHEMISTRY OF PETROL & DIESEL

There's a lot behind the fuel we put in our cars - in this graphic, we take a look at the differences between diesel, leaded petrol, and unleaded petrol.

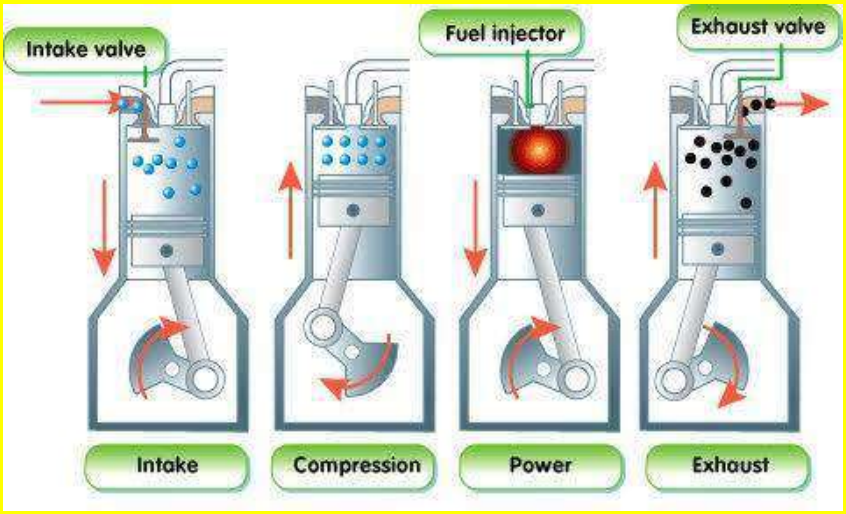
PETROL & DIESEL - THE DIFFERENCE



Petrol and diesel are both obtained by fractional distillation of crude off However, they differ in their composition, Diesel is a fraction of crude oil that is removed at a higher boiling point, and contains a large amount of energy per litre, meaning more miles can be covered with the same volume of fuel.

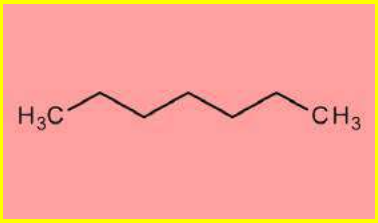
HOW ENGINES WORK

1. *INTAKE* *AIR, FUEL INJECTED (PETROL ENGINES)*
2. *COMPRESSION.* *HIGHER COMPRESSION WITH DIESEL*
3. *. COMBUSTION* *FUEL INJECTED (DIESEL ENGINES)*
4. *. EXHAUST* *WASTE GASES FROM COMBUSTION*
5.

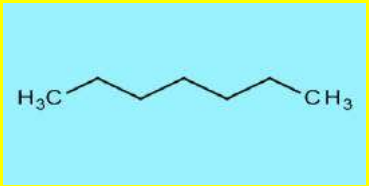


OCTANE RATING & KNOCKING

Knocking occurs when fuel's combustion doesn't occur in sync with the engine cycle. Thuis causes lower engine efficiency and engine damage. Octane ratings gauge how well fuel avoids this problem, with higher values indicating less knocking. Isooctane (100) an
n-heptane [0] are used as references.



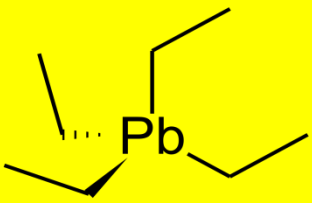
n-HEPTANE.
OCTANE RATING: 0.



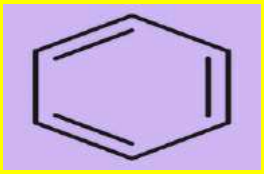
ISO-OCTANE
OCTANE RATING: 100

LEADED & UNLEADED PETROL

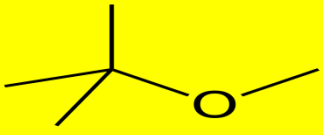
Compounds can be added to petrol to boost its octane rating. Tetraethyl lead was one of these, but is now banned in most countries as it releases toxic lead fumes. Alternative anti knocking agents used in unleaded petrol include methyl tertiary butyl ether (MTBE), ethanol, benzene and toluene.



Tetraethyl lead)



Benzene



MTBE(methyl tertiary butyl ether)

WHAT IS SOLAR ENERGY?

AN ARTICLE BY: SUMITRA MURMU & SAGNIK GHOSH

Every day, the sun radiates (sends out) an enormous amount of energy—called solar energy. It radiates more energy in one day than the world uses in one year. This energy comes from within the sun itself.

Like most stars, the sun is a big gas ball made up mostly of hydrogen and helium gas. The sun makes energy in its inner core in a process called nuclear fusion. It takes the sun's energy just a little over eight minutes to travel the 93 million miles to Earth. Solar energy travels at the speed of light, or 186,000 miles per second, or 3.0 x 108 meters per second.

Only a small part of the visible radiant energy (light) that the sun emits into space ever reaches the Earth, but that is more than enough to supply all our energy needs. Every hour enough solar energy reaches the Earth to supply our nation's energy needs for a year! Solar energy is considered a renewable energy source due to this fact.

Today, people use solar energy to heat buildings and water and to generate electricity. Solar energy accounts for a very small percentage of our nation's energy consumption—less than some few percentages. Solar energy is mostly used by residences and to generate electricity.

SOLAR COLLECTORS

heating with solar energy is not as easy as one might think. Capturing sunlight and putting it to work is difficult because the solar energy that reaches the Earth is spread out over a large area. The sun does not deliver that much energy to any one place at any one time.
The amount of solar energy an area receives depends on the time of day, the season of the year, the cloudiness of the sky, and how close
you are to the Earth's Equator.

A solar collector is one way to capture sunlight and change it into usable heat energy. A closed car on a sunny day is like a solar collector. As sunlight passes through the car's windows, it is absorbed by the seat covers, walls, and floor of the car. The absorbed light changes into heat. The car's windows let light in, but they don't let all the heat out. A closed car can get very hot!

SOLAR SPACE HEATING

Space heating means heating the space inside a building. Today, many homes use solar energy for space heating. A passive solar
home is designed to let in as much sunlight as possible. It is like a big solar collector.
Sunlight passes through the windows and heats the walls and floor inside the house. The light can get in, but the heat is trapped inside.
A passive solar home does not depend on mechanical equipment, such as pumps and blowers, to heat the house, whereas active solar homes do.

SOLAR
WATER HEATING
Solar energy can be used to heat water. Heating water for bathing, dishwashing, and clothes washing is the second largest home
energy cost. Installing a solar water heater can reduce your water heating bill by as much as 50 percent.
A solar water heater works a lot like solar space heating. In our hemisphere, a solar collector is mounted on the south side of a roof where it can capture sunlight. The sunlight heats water in a tank. The hot water is piped to faucets throughout a house, just as it
would be with an ordinary water heater.
SOLAR ELECTRICITY
Solar energy can also be used to produce electricity. Two ways to make electricity from solar energy are photovoltaic's and solar
thermal systems.

Photovoltaic Electricity

Photovoltaic comes from the words photo, meaning light, and volt, a measurement of electricity. Sometimes photovoltaic cells are
called PV cells or solar cells for short. You are probably familiar with photovoltaic cells. Solar-powered toys, calculators, and roadside telephone call boxes all use solar cells to convert sunlight into electricity.
Solar cells are made up of silicon, the same substance that makes up sand. Silicon is the second most common substance on Earth.
Solar cells can supply energy to anything
that is powered by batteries or electric
power.

Electricity is produced when radiant energy from the sun strikes the solar cell, causing the electrons to move around. The action of the electrons starts an electric current. The conversion of sunlight into electricity takes place silently and instantly. There are no mechanical parts to wear out.
Compared to other ways of making
electricity, photovoltaic systems are
expensive and many panels are needed to equal the electricity
generated at other types of plants.
Production cost of electricity from solar cells is significantly low.Solar systems are often used to generate electricity in remote areas that are a long way from electric power lines.

ƒ Solar Thermal Electricity

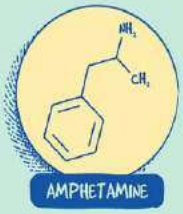
Like solar cells, solar thermal systems, also called concentrated solar power (CSP), use solar energy to produce electricity, but in a different way. Most solar thermal systems use a solar collector with a mirrored surface to focus sunlight onto a receiver that heats a liquid. The super-heated liquid is used to make steam to produce electricity in the same way that coal plants do.
Solar energy has great potential for the future. Solar energy is free, and its supplies are unlimited. It does not pollute or otherwise damage the environment. It cannot be controlled by any one nation or industry. If we can improve the technology to harness the sun's enormous power, we may never face energy shortages again.

AN ARTICLE BY - BINOY CHANDRA DEY

DO YOU KNOW?

WHAT IS ADDERALL?

And how does it work?



Adderall Basics

The active ingredient in Adderall is amphetamine, a synthetic stimulant. Amphetamine can boost mood, suppress appetite, reduce fatigue, increase attention span, and has been used to treat narcolepsy, depression, and attention-deficit/hyperactivity disorder (ADHD). More than 25 million people worldwide use amphetamine.

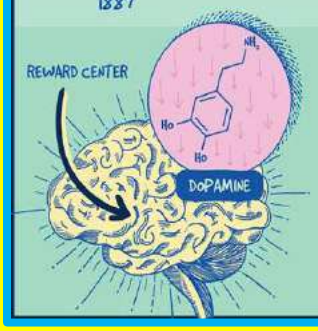
Amphetamine's History

Amphetamine was first synthesized in 1887 by Romanian chemist Lazar Edeleanu, but wasn't recognized to have any medical benefits.

Potential medical use wasn't explored until 1929, when amphetamine was re-synthesized by American chemist Gordon Alles. In the early 1930's, amphetamine went to market in an inhaler format called Benzedrine, followed a few years later by Benzedrine Sulfate "pep pills." The pills quickly became popular with the military, truckers, dieters, students, and more for their ability to boost morale, fight fatigue, and suppress appetite.

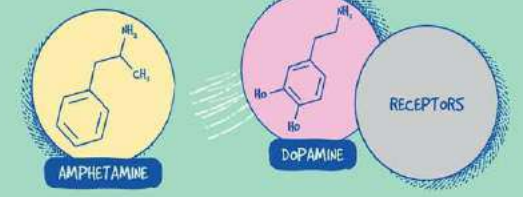
Due to the dangers of amphetamine overuse and mixing with other drugs, the Food & Drug Administration began requiring prescriptions in the late 1950's. Today, in small doses, amphetamine is used to treat ADHD.

1887 — 1929 to Mid 1930s — 1950s to Today



How Does It Work?

People with ADHD have lower levels of a neurotransmitter called dopamine. Because dopamine is important in the brain's reward center, those with ADHD tend to seek out extra stimulation and are susceptible to small distractions.



Amphetamine counteracts this distractibility by boosting the dopamine's availability to bind to dopamine receptors.

YOU DON'T ALWAYS TAKE ADDERALL BUT WHEN YOU DO, YOU TURN INTO A WORKING MACHINE !

HOW OLD IS THE EARTH?

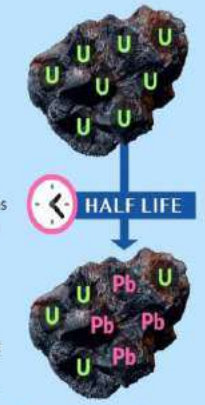
Thanks to chemistry and some space rocks, we have a pretty good estimate of the Earth's age: about 4.54 billion years old *(give or take a few million years)*.

RADIOMETRIC DATING

Scientists can use radiometric dating to determine the age of fossils, rocks, ancient bones and the Earth. Radiometric dating is based on radioactive decay, the process by which atoms of an element (parent atoms) break down, releasing radiation and transforming into a new element (daughter atoms).

The term "half-life" marks the time at which half of the parent atoms have turned into daughter atoms. Because this decay happens at a constant rate, scientists can calculate the age of a sample by counting how many parent and daughter atoms are present.

For an atom to be good for determining the Earth's age, both the parent and daughter atoms must be stable enough to persist for billions of years, and must be present in the material you are dating (like ancient rocks, for example). Uranium, which decays through a series of radioactive elements into lead (Pb), is a common choice.



SOLAR SYSTEM SNAPSHOT

To understand how old Earth is, scientists needed to turn to space. Our planet is so geologically active that the oldest rocks have probably all been destroyed. Meteorites that fall to Earth are practically unchanged since the time our solar system—and home planet—formed. The oldest meteorites analyzed with radiometric dating are about 4.5 billion years old.

RADIOACTIVE DECAY

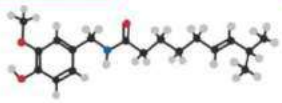
238 U URANIUM → 230 Th THORIUM → 226 Ra RADIUM → 218 Po POLONIUM ⋯ 206 Pb LEAD

REMEMBERING THE FAMOUS PROVERB: "MY SON, TOO OLD IS THE EARTH DON'T MAKE FUN OF IT"

Why do hot peppers make you cry?

The chemistry behind the tears

CAPSAICIN

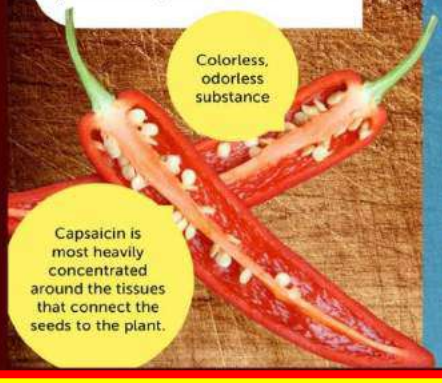


Capsaicin ($C_{18}H_{27}NO_3$) is the chemical that makes hot peppers spicy. However, those peppers aren't actually hot, temperature-wise—we just perceive the spiciness as heat.

When we eat hot peppers, the capsaicin binds to pain receptors in our mouths called TRPV1. These receptors respond to things with the potential to damage our tissues, including heat, acidity, and bitter compounds. Capsaicin fits into these receptors, which send a signal from our mouth to our brain that we are eating something we shouldn't be.

TRPV1 Receptors

Colorless, odorless substance



Capsaicin is most heavily concentrated around the tissues that connect the seeds to the plant.

SWEET RELIEF Water might seem like a good way to quench the fire in our mouths, but it actually makes things worse. Capsaicin is nonpolar, so it doesn't dissolve in polar molecules like water. Instead of washing away the capsaicin, water spreads it around your mouth, intensifying the pain.

Bread and dairy products have plenty of nonpolar molecules—like casein and milk fat in dairy—that dissolve capsaicin and can even pull it off the TRPV1 receptors in your mouth.

What does the brain make of all this? The message relayed from TRPV1 receptors in the mouth is perceived as heat, making our noses run and our eyes water. This is the body's way of letting us know to stop eating and drink something cold to halt the pain.

?

?

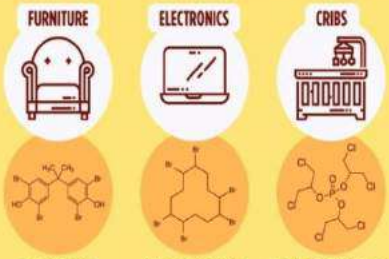
WHICH OF SANTA'S FRIENDS IS THE CHILLEST?

WHEN WILL CHRISTMASS COME AGAIN?

Should Santa wear a flame-retardant suit?

WHAT ARE FLAME RETARDANTS?

Flame retardants are compounds added to household items, electronics, and more to slow down the start and growth of fires. They are usually organohalogens: carbon-based molecules manufactured to have at least one type of halogen element, like chlorine or bromine.



HOW DO THEY SLOW FIRE?

If Santa hopped down a chimney onto a still-burning fire and set his trousers ablaze, the combustion reaction would look something like this:

EMBERS + PANTS + O_2 → CO_2 + WATER VAPOR + HEAT

Atmospheric oxygen reacts with the flames to form hydroxyl radicals. Hydroxyl radicals have an unpaired electron in need of a bond, so they snap up hydrogen atoms from the fuel source (Santa's pants), feeding the fire.

To slow a fire down, a flame retardant like TDCPP gives off hydrogen chloride (HCl) when heated. Instead of snapping up hydrogen from the fuel source, the fire gets hydrogen from the HCl, leaving behind a chlorine radical. Because chlorine radicals are more stable than oxygen radicals, they don't react as easily, and slow down the whole combustion reaction.

HYDROXYL RADICAL + HYDROGEN CHLORIDE → WATER + CHLORINE RADICAL

TOXICITY

Most flame retardants are coated onto products instead of being chemically bound to them, so the molecules can leach into foods and onto household surfaces, and build up in our bodies over the years. Mounting evidence suggests that some flame retardants are hazardous to our health and to the environment. They have been linked to:

- Endocrine disruption
- Developmental & reproductive problems
- Some types of cancers

DO YOU KNOW IT?

Why do we get dizzy when we spin?

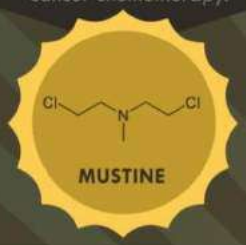
When you move your head, the acceleration is detected by your hair lining the sides of fluid filled tube in inner ear. If you spin long enough, the brain getting desensitized to the constant turn signals from your ear and adjusts to zero them out. When you stop, the ears correctly report zero turning, but your brain is still actively cancelling this out and so it thinks you are now spinning in the opposite direction.

CHEMISTRY IN WAR

HOW CHEMISTRY CHANGED WORLD WAR I

MUSTARD GAS SAVES LIVES?

Autopsies of people who died of mustard gas poisoning during WWI showed low white blood cell counts. Researchers then thought, "Hmm, if mustard gas kills white blood cells, could it can treat cancers that affect immune cells, such as leukemia?" At a cellular level, mustard gas and nitrogen mustard form intermediates that bind to DNA's two helical strands, locking them together. Because the strands can't pull apart during cell division, the cells die. After the war, researchers developed nitrogen mustard into one of the first cancer chemotherapy drugs called mustine. It wasn't the best drug ever, but mustine paved the way for treating cancer with chemicals, or cancer chemotherapy.



MUSTINE

DEATH BY BULLETS (NOT DISEASES)

Trenches were slimy, muddy pits where soldiers could easily contract infections. Prior to WWI, most deaths during wars were caused by diseases from living in unsanitary conditions. With advances in medicine, WWI was the first war where a majority of fatalities were caused by bullets or shells, rather than diseases. Doctors used chloride of lime to disinfect and sterilize water. Tinctures of iodine, carbolic acid, and Dakin's solution, which is sodium hypochlorite and boric acid, were used to clean wounds.

CHLORIDE OF LIME

SHELL-SHOCKED

Much of WWI was fought using artillery shells filled with explosives, such as TNT. Roughly 100 shells were shot per minute during one 10-month battle during the war. It's no wonder that soldiers had "shell-shock." All these shells required a lot of explosives. Germany might have run out of ammo in 1916 because the Allies blocked its access to nitrates, which are essential for making explosives. But Fritz Haber—a chemist who also proposed poison gas as a weapon—had a solution to the shortage. He and Carl Bosch had figured out a way to harness nitrogen in the air for making ammonia, a precursor to nitrates. The same reaction was also used to make fertilizers that could feed billions, but in WWI it was used to make ammo that killed millions.

TNT

REACTIONS EVERYDAY CHEMISTRY

Source: "The Chemists' War: 1914–1918" by Michael Freemantle

VERY INTERESTING!

CAN SOLAR PANELS BE RECYCLED?

PANELS THAT CONVERT SOLAR ENERGY IN ELECTRICITY LUST FOR DECADES, BUT, WHEN THEY DO EVENTUALLY WEAR OUT, THEY CAN BE TURNED INTO NEW PRODUCTS INCLUDING FRESS SOLAR PANELS. MOST OF THE MATERIALS THEY ARE MAID FROM, SUCH AS GLASS ALUMINIUM AND COPPER, HAS BEEN RECYCLED FOR YEARS. THE SEMICONDUCTOR MATEARIALS IN THEM, CAN VIRTUALLY ALL BE RECOVERED BY SPECIALIST COMPANIES.

"Science is, on the whole, an informal activity, a life of shirt sleeves and coffee served in beakers.": CHEMIST AND SAILING ENTHUSIAST, NOBEL LAUREATE GEORGE PORTER.

HOW TO HACK YOUR LIFE BY CHEMISTRY?

Chemistry Life Hacks

Coffee too bitter?

Add salt

Try sprinkling a pinch of salt into your cup. The salt dissolves, releasing sodium ions into the coffee. These ions can block some of the bitter compounds from binding to receptors on your tongue.

Cut onions without crying

The compound in onions responsible for the tears is syn-propanethial-S-oxide. Chopping onions breaks open cells, launching a series of reactions that release this volatile irritant. Enzymes first convert amino acid sulfoxides into sulfenic acid, then into syn-propanethial-S-oxide. When syn-propanethial-S-oxide drifts up to your eyes, tears well up to wash away the irritant.

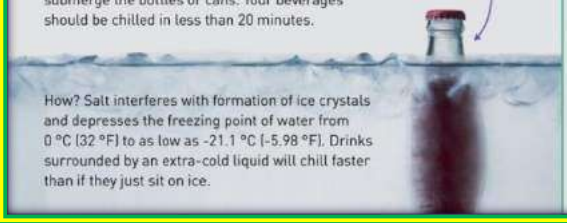
Tip: *Refrigerate onions prior to chopping—it will slow the conversion and release of these compounds.*

Refrigerate them

Quick-chill beverages

If you need to chill drinks fast, try this: Fill a bucket with water, mix in a bunch of salt, add ice and fully submerge the bottles or cans. Your beverages should be chilled in less than 20 minutes.

Submerge in salty ice water



How? Salt interferes with formation of ice crystals and depresses the freezing point of water from 0 °C (32 °F) to as low as -21.1 °C (-5.98 °F). Drinks surrounded by an extra-cold liquid will chill faster than if they just sit on ice.

DIY fruit fly trap

Pour some apple cider vinegar and a few drops of dish soap into a small dish. Cover the dish with plastic wrap and poke some holes in the top.

Fruit fly larvae feed on microbes that thrive in fermenting foods, so the adults are attracted to vinegar as a potential place to lay eggs. The dish soap breaks the vinegar's surface tension, so when the flies fall in, they die.

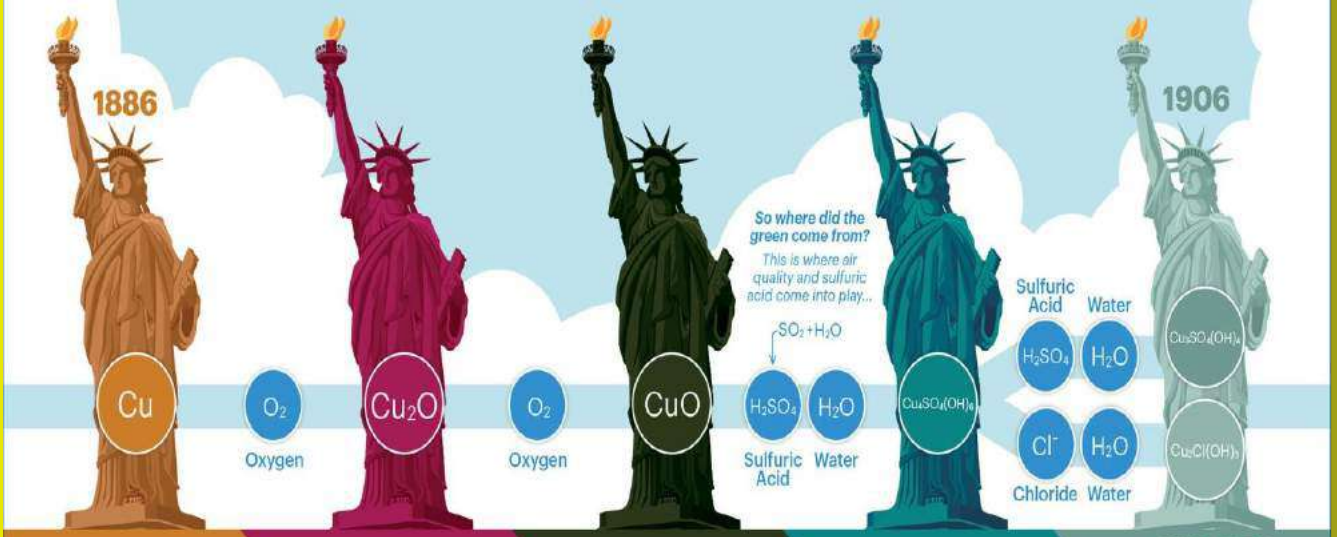
Apple cider vinegar + dish soap

HOW MANY PENNIES COULD THE STATUE OF LIBERTY'S COPPER MAKE?

How the Statue of Liberty Became Green

A PATINA 20 YEARS IN THE MAKING

PATINA: *a film of green or brown covering the surface of copper or other metals, formed through oxidation over many years*



The Statue of Liberty, a gift to the people of the United States from the people of France, was unveiled in 1886. The metal "skin" that covers her iron skeleton is made of copper, so **she started out looking as bright as a new penny.**

Over time, however, the color of new copper began to dull, thanks to oxidation by our atmosphere. Copper on the surface reacted with oxygen to **form a pinkish red mineral called cuprite.**

Cuprite was further oxidized to **form a black mineral called tenorite.**

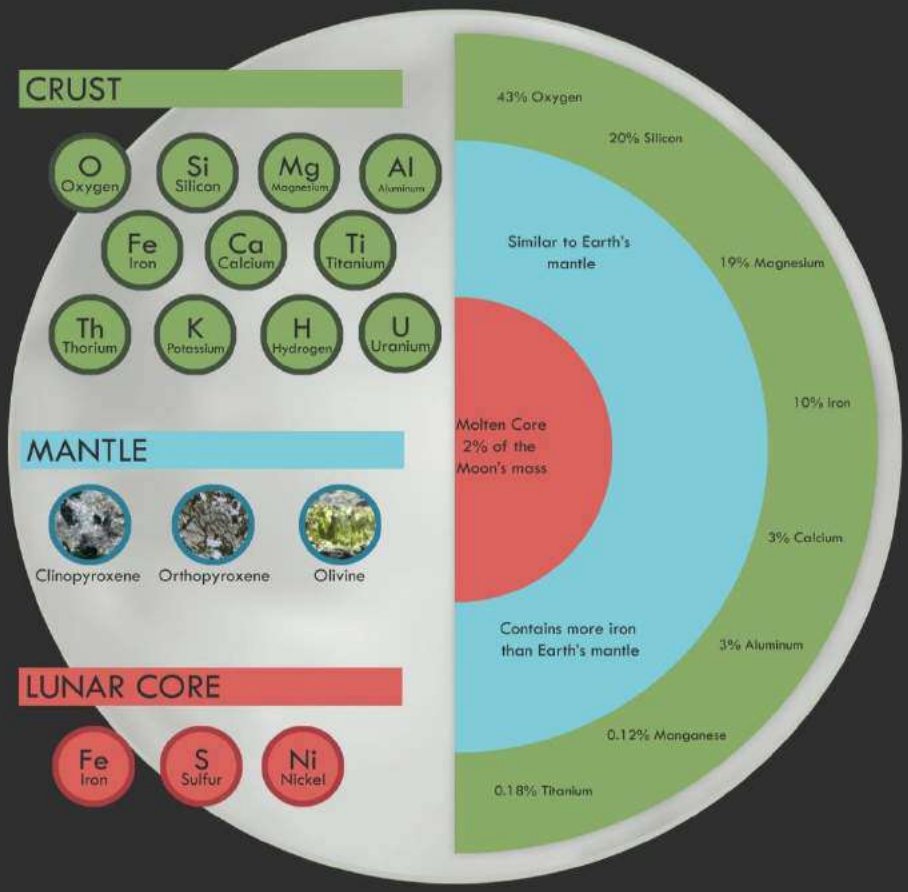
Meanwhile, sulfur dioxide was being released into the atmosphere. Once airborne, sulfur dioxide reacted with water to form sulfuric acid.

Tenorite reacted with sulfuric acid, along with more water, to **form a blue-green-colored mineral called brochantite.** Brochantite also reacted with sulfuric acid and water to **form a green mineral called antlerite.**

And, because the statue's pedestal sits in New York Harbor, salt spray also made a contribution. Chloride ions from sea water reacted with brochantite and water, **creating an olive-green mineral called atacamite.**

THE STATUE OF LIBERTY'S ICONIC GREEN PATINA WAS FULLY FORMED BY 1906, AND IT CONTINUES TO PROTECT THE UNDERLYING COPPER FROM ADDITIONAL CHEMICAL REACTIONS.

WHAT IS THE MOON MADE OF?
(HINT: NOT CHEESE)



SMASHY SMASHY

Given its chemical similarity to Earth, many researchers think that the Moon formed 4.5 billion years ago, when a large protoplanet smashed into the young Earth. Gravity brought the resulting debris together, eventually forming the Moon.

50/50

Recent research suggests that the moon is roughly a 50-50 mix of materials from Earth and the protoplanet that smashed into it.

DO BLACK HOLE COLLAPSE?

THE SCHWARZSCHILD RADIUS (EVENT HORIZON) OF A BLACK HOLE IS SOMETIMES THOUGHT OF AS THE BLACK HOLE'S SIZE. IT IS PROPORTIONAL TO MASS, WHICH MEANS THAT MORE MASSIVE BLACK HOLES HAVE BIGGER SCHWARZSCHILD RADII. LEFT ALONE, BLACK HOLES LOSE MASS DUE TO "HAWKING RADIATION", SO THAT THEIR EVENT HORIZONS ARE SLOWLY SHRINKING. A TYPICAL BLACK HOLE WOULD TAKE MANY BILLIONS OF TIMES THE AGE OF THE UNIVERSE TO COMPLETELY 'EVAPORATE' AND DISAPPEAR.

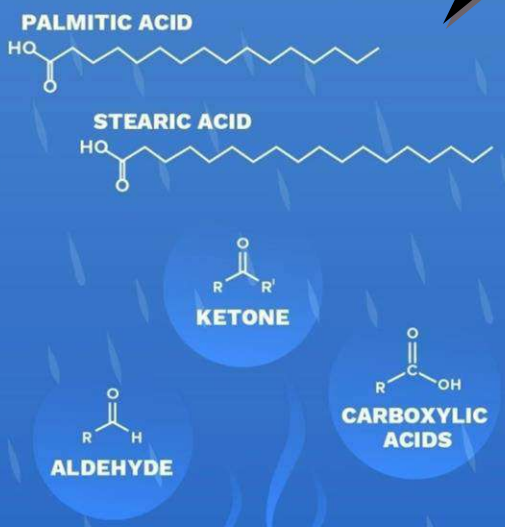
BUT, THE INTERIOR OF THE BLACK HOLE, OF ITS 'SINGULARITY' (THE POINT AT WHICH ALL THE BLACK HOLE'S MATTER IS CONCENTRATED) HAS ALREADY REACHED THE LIMIT OF ITS DENSITY AND CANNOT 'COLLAPSE' ANY FURTHER.

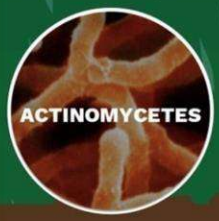
What's in the smell of first rain?

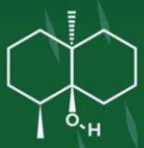
CAN YOU FEEL THE SMELL?

Petrichor is that earthy smell released by the first rain after a dry spell.

In the 1960s, two Australian scientists coined the term from the ancient Greek words for "blood of stones." These scientists, Isabel Joy Bear and Richard Thomas, extracted a yellow oil — petrichor — from dry rocks, clay and soil. It contained fatty acids from plants, including palmitic acid and stearic acid. Though the fatty acids don't smell like much on their own, in soil they get broken down into smaller, smellier molecules like aldehydes, ketones and smaller carboxylic acids.







The scent of freshly-turned earth also has a name: geosmin.

Geosmin is produced by a group of bacteria called Actinomycetes, though it's unclear why. You can smell geosmin after it rains, or in your garden after tilling soil or watering plants. Our noses are extremely sensitive to this odor: We can detect geosmin at concentrations less than 10 parts per trillion — about a teaspoonful in 200 Olympic-sized swimming pools!

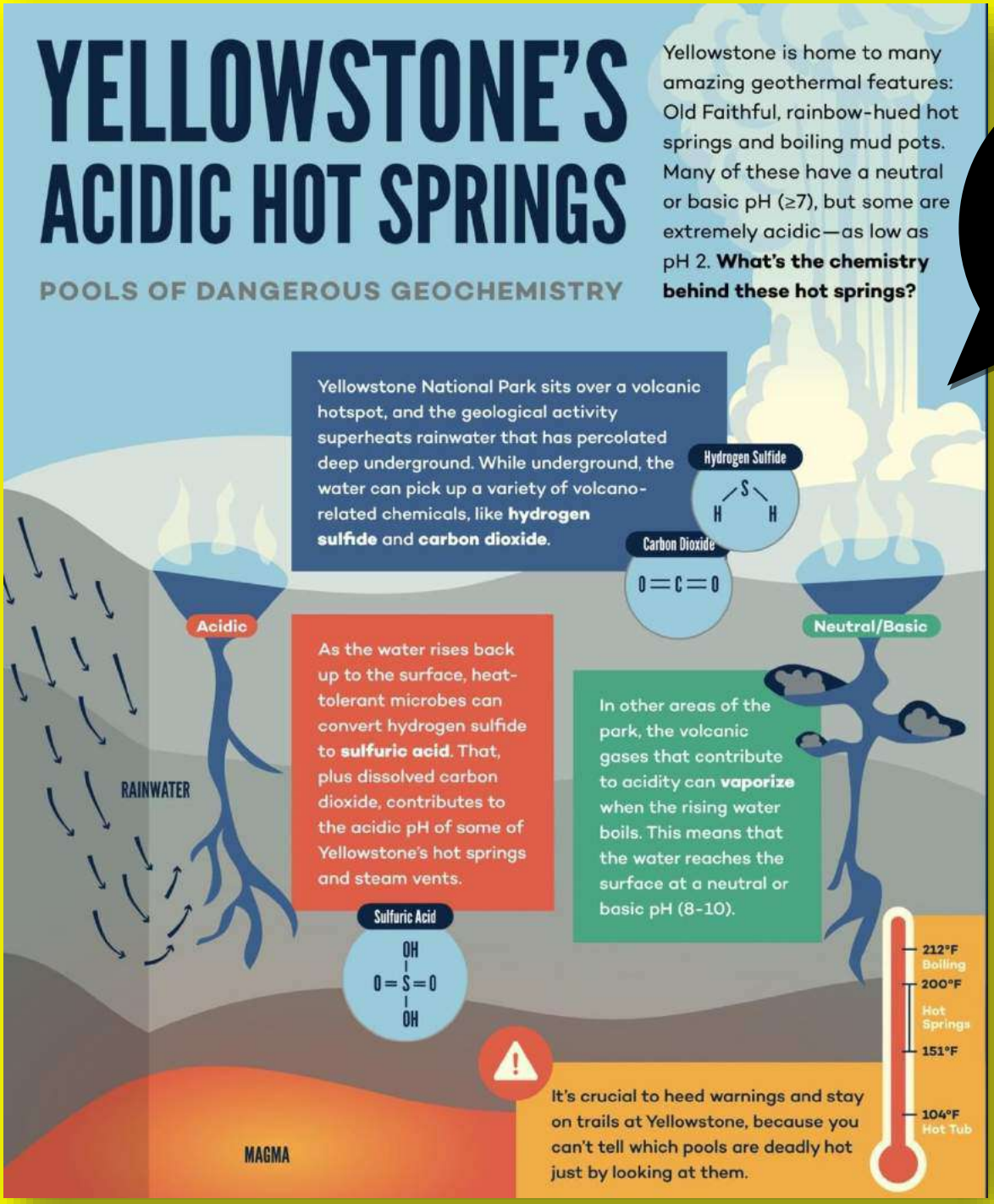
So how do these earthy smells reach our noses?

During light or moderate rainfall, raindrops can trap tiny air bubbles beneath them when they hit the ground or other porous surfaces. These air bubbles then force their way to the surface, blasting out in a spray of tiny, aerosolized droplets. Scent molecules from the earth hitch a ride in this aerosol and spread on the wind.

DO YOU KNOW THE REASON?

Why can't penguins fly?

Even the very smallest penguin, the fairy penguin, weighs 1 kg which is about as much as a herring gull but herring gulls have 1.4 m wingspan compared with just 32 cm for the fairy penguins. Water is 784 times denser than air and around 62 million years ago, penguins began evolving adaptation for swimming underwater. Their bones are filled with heavy bone narrow rather than air and they have much larger stomachs for undergoing long fishing trips away from the nest.



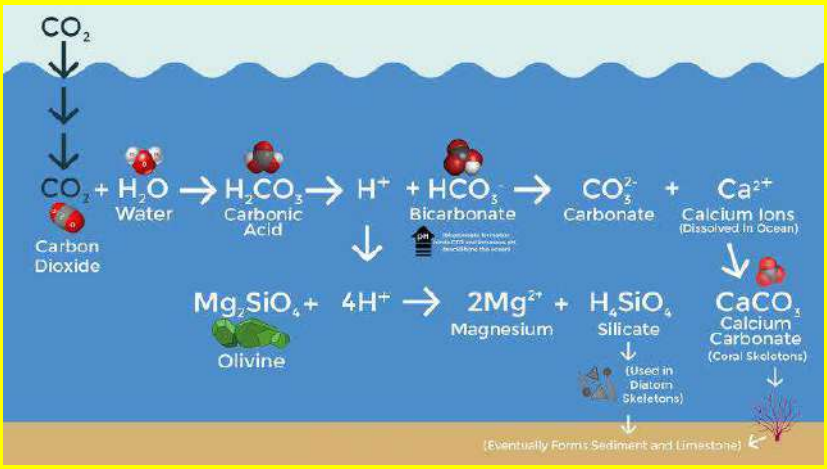
CAN AN ACIDIC HOT SPRING DISSOLVE A HUMAN?

DID YOU KNOW?

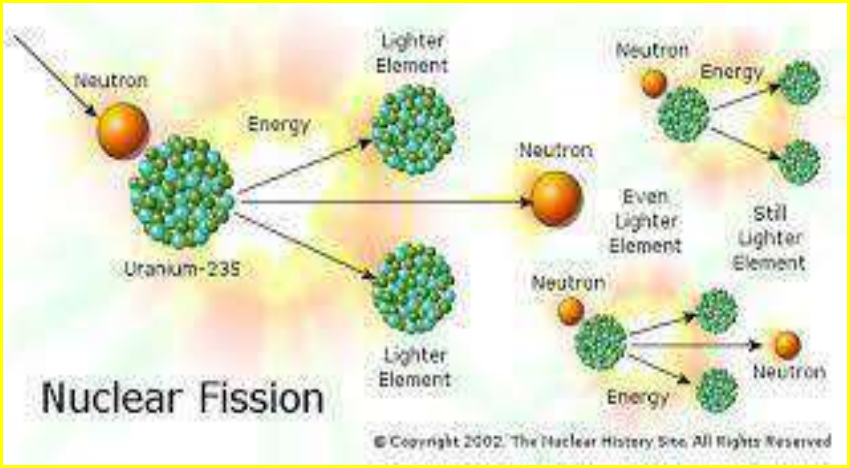
WHY IS AIR INVISIBLE?

Air is mostly made of Nitrogen and Oxygen molecules that are spread too thinly to affect light noticeably by, say altering it's color or intensity. Even so air's presence is revealed in hot weather through the shimmering effect called "heat haze". This is the result of the heat causing fluctuations in the density of air which in turn affects its optical properties.

CAN OLIVINE BE THE ULTIMATE CO_2 EATER?



Forests naturally remove CO2 from the atmosphere. Olivine, a mineral present in igneous rocks, is also capable of extracting this greenhouse gas. The downside is that the process is slow, which means it cannot keep up with the rate at which we're pumping CO2 into the atmosphere. So, could we accelerate this natural process? And what are the potential side-effects of this action?



THIS IS BOMB!

THIS IS VERY INTERESTING!

• **HOW NUCLEAR FISSION WORKS?**

1. **A neutron from a neutron sources collides with a fissionable nucleus (here for example, uranium-235) and splits it into two elements i.e, Barium and Krypton, releasing a large amount of energy in the form of heat and radiation.**

2. More neutrons are also released when a uranium atom splits. These neutrons continue to collide with other uranium atoms, and the process repeats itself over and over.

3. This chain reaction continues with neutrons interacting with uranium nuclei. In a nuclear power plant, these number of free neutrons are controlled in a reactor using neutron absorbing rods. Whereas in BOMBS, no such controls are in place. So the chain reaction becomes unconstrained and huge amount of energies are released.

WHY DO KNUCKLES POP?

The "pop" of a cracked knuckle is caused by bubbles bursting in the synovial fluid — the fluid that helps lubricates joints. The bubbles pop when you pull the bones apart, either by stretching the fingers or bending them backward, creating negative pressure.

ALL ABOUT VACCINE!

COMMON COMPONENTS OF VACCINES

As well as the active components, vaccines contain a number of other substances. This graphic examines these and the reasons for their inclusion.

ACTIVE COMPONENTS

A form of the virus, bacteria or toxin that causes the disease is used as the antigen. This antigen is modified from the original form so it no longer causes disease, but still elicits an immune response from the body. To modify the disease-causing agent, it can be treated with specific chemicals, so it cannot replicate. It can also be treated so it does not cause serious disease, or only parts of the disease-causing agent that do not cause serious symptoms can be used.

ADJUVANTS

$Al(OH)_3$ ALUMINIUM HYDROXIDE

$AlPO_4$ ALUMINIUM PHOSPHATE

Added to enhance the body's immune response to the vaccine. How they work isn't entirely understood, but it's thought they help keep antigens near the site of injection. This means they can be easily accessed by the immune system cells. There is no evidence of any serious adverse effects from adjuvants, though they can cause some minor reaction near the injection site.

ANTIBIOTICS

GENTAMICIN NEOMYCIN

Antibiotics are used in the manufacturing process of the vaccine to prevent bacterial contamination. They are later removed, and only residual quantities remain in the vaccine after the production process.

STABILISERS

SORBITOL

$MgSO_4$ MAGNESIUM SULFATE

Vaccines need to be storable, so stabilisers are added to ensure the various components remain stable and effective. A variety of different stabilisers are used; either inorganic magnesium salts such as magnesium sulfate or magnesium chloride, or mixtures of lactose, sorbitol and gelatin. Monosodium glutamate and glycine are also used in some cases.

PRESERVATIVES

THIOMERSAL PHENOL PHENOXYETHANOL

Preservatives help prevent contamination of vaccines. They are used particularly in multi-dose vaccines. Thiomersal is a common preservative, though its use declined in the late 1990s when vaccines were falsely linked to child autism. This link was later shown to be an elaborate medical hoax, and there is no link between thiomersal and autism.

TRACE COMPONENTS

FORMALDEHYDE

These are left over from the vaccine production process. Though they are purposefully removed, residual amounts remain. Formaldehyde is one such agent, used to deactivate viruses and detoxify bacteria, but amount remaining is several hundred times lower than the smallest amount known to cause harm in humans.

CHEMISTRY IN YOUR VACCINE!

WHAT ARE RNA VACCINES AND HOW DO THEY WORK?

WHAT ARE RNA VACCINES?

SARS-CoV-2

Viral RNA — The virus's genetic material. Contains instructions for making proteins.

Spike protein — Protein which helps the virus penetrate cells and initiates an infection.

The genetic code of the SARS-CoV-2 virus is made up of RNA. Scientists isolated the part of this genetic code that contains the instructions for making the virus's spike protein.

LIPID NANOPARTICLES

RNA INSTRUCTIONS

VACCINE SHOT

Synthetic RNA which codes for the virus spike protein is packed in lipid nanoparticles (very small fat droplets). This stops our bodies' enzymes breaking it down and helps our cells take it in.

Synthetic RNA

Viral protein

Human cell

Immune response

Once the synthetic RNA is inside one of our cells, the cell follows the RNA instructions to produce the virus spike protein. Its production then triggers an immune response in our bodies.

RNA VACCINES: BENEFITS AND CHALLENGES

VACCINE PRODUCTION

RNA is easy to make in a lab, so RNA vaccines can be developed quicker than other vaccines.

SAFETY OF THE VACCINES

RNA can't cause infection and is broken down by normal processes in our cells. An RNA vaccine hasn't been licensed for use in humans before but they've been under development for several years for other viruses, including influenza, HIV, and Zika.

STORAGE AND TRANSPORT

Some RNA vaccines must be stored at low temperatures to remain stable, which makes storage and transport more challenging.

RNA VACCINES FOR COVID-19

Several proposed vaccines for COVID-19 are RNA vaccines. They can be based on two different types of RNA.

mRNA vaccines

Moderna
Pfizer & BioNTech
CureVac

saRNA vaccine

Imperial College
Arcturus

mRNA AND saRNA: WHAT'S THE DIFFERENCE?

The structures of mRNA and saRNA are similar but have a key difference, as the diagrams below show.

mRNA — mRNA stands for messenger ribonucleic acid

Untranslated regions (Regions which don't contain code for proteins)

SPIKE PROTEIN CODING REGION

RNA cap — Stops RNA breaking down; helps start protein synthesis in human cells.

Poly-A tail — Long chain of adenine (A) bases which help stabilise the RNA.

saRNA — saRNA stands for self-amplifying ribonucleic acid

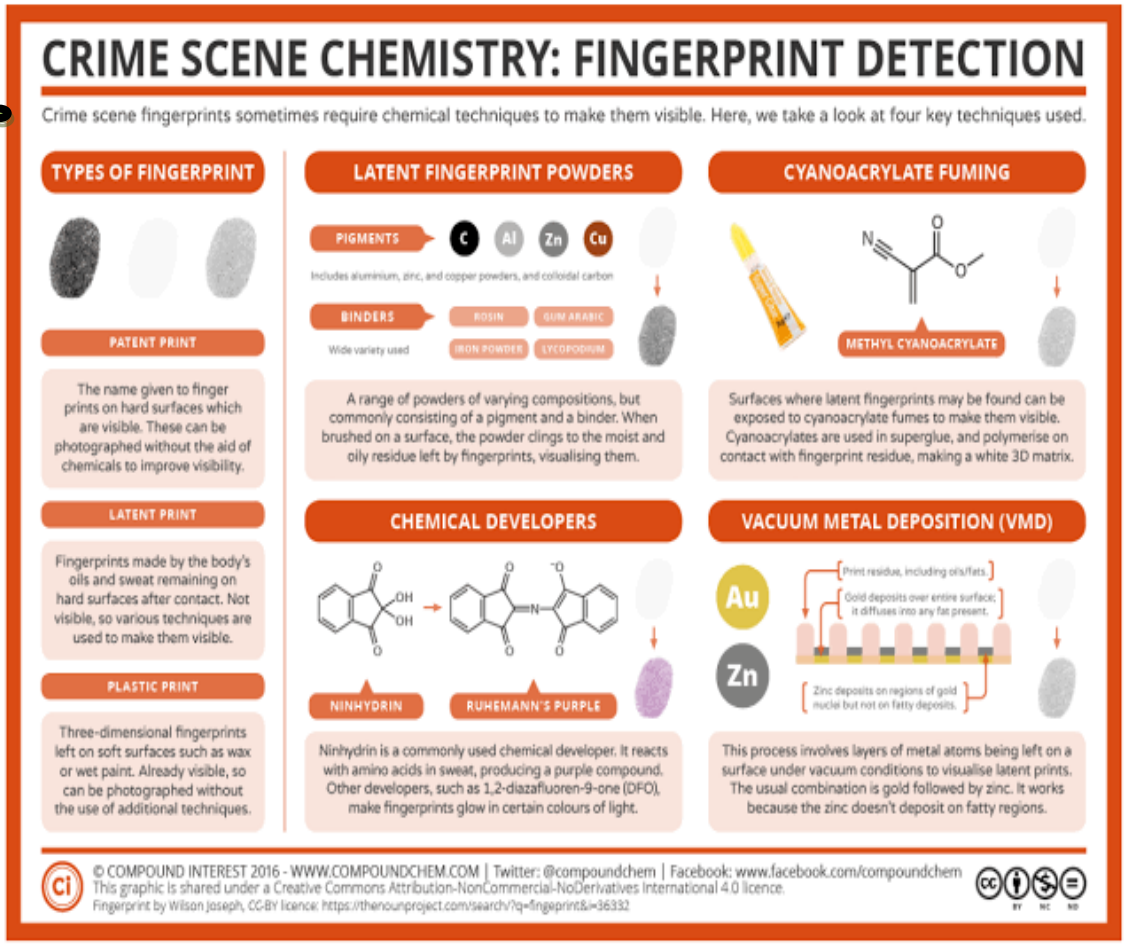
SPIKE PROTEIN CODING REGION

Code for viral replicase enzyme — Once in human cells, the creation of the viral replicase enzyme helps make multiple copies of the viral RNA.

As saRNA produces more copies of itself once it's in a cell, it can be given in smaller doses than mRNA vaccines. This makes the cost per dose lower and means higher numbers of doses can be produced from the same volume of vaccine.

ROYAL SOCIETY OF CHEMISTRY

CHEMISTRY IN CRIME



CAN A COMPUTER GENERATE A TRULY RANDOM NUMBER?

COMPUTERS ARE OFTEN REQUIRRED TO PRODUCE RANDOM NUMBERS AS THEY'RE USEFUL FOR A HOST OF TASKS, FROM TAKING RANDOM SAMPLES OF DATA TO SIMULATING THE FORMATION OF GALAXIES. BUT COMPUTERS PRODUCE THIS NUMBERS USING MATHEMATICAL FORMULAS, WHICH MEANS THEY AREN'T TRULY RANDOM. THIS IS NOT AS BAD AS IT SEEMS, AS TRUE RANDOMNESS IS PRONE TO PRODUCING BIZARRE PATTERNS THAT CAN FOOL RESEARCHERS INTO SEEING EFFECT THAT DON'T EXISTS. TO AVOID THIS THE SO-CALLED PSEUDO-RANDOM NUMBER GENERATORS (PRNGs) FORMULAS USED IN COMPUTERS UNDERGO STRATISTICAL TESTS TO KEEP THE RISKS OF LONG 'RUNS' BELOW A CERTAIN THRESHOLD, EVEN SO, SOME COMPUTER-GENERATED RANDOM NUMNERS HAVE STILL CAUSED PROBLEMS. SUBTLE PATTERNS IN THE OUTPUT OF THE SO-CALLED RANDO.

GENERATOR CREATED BY IBM IN THE 1960s IS SUSPECTED TO HAVE UNDERMINED THE REABILITY OF MANY RESEARCH PROJECTS OVER THE YEARS.

REFERENCE: ACS, ROYAL SOCIETY OF CHEMISTRY, GOOGLE etc.

IF YOU HAVE ANY QUERIES/ SUGGESTIONS/FEEDBACK ON THIS ARTICLE, PLEASE WRITE AT:
deybinoy7711@gmail.com

ATOM SMASHER

AN ARTICLE BY: SUBHAM DAS & BITHIKA ROY

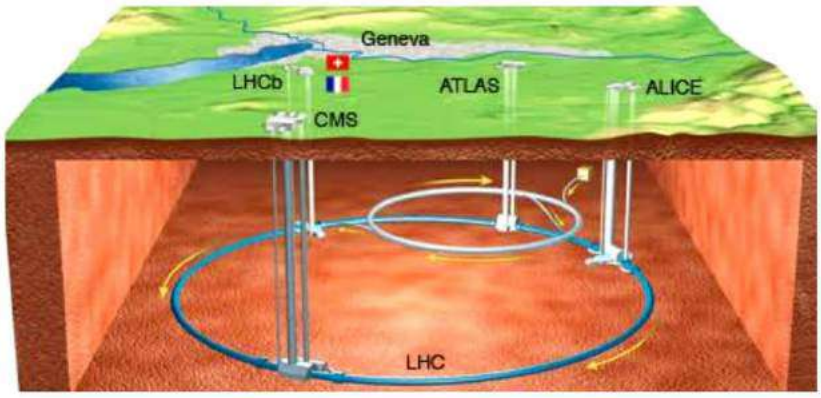
THE UNIVERSE IS THE BIGGEST THING WE CAN IMAGINE, BUT THE SECRETS OF HOW IT FORMED MAY BE LOCKED INSIDE THE SMALLEST THINGS -- ATOMS AND THE TINY PARTICLES PACKED INSIDE THEM.

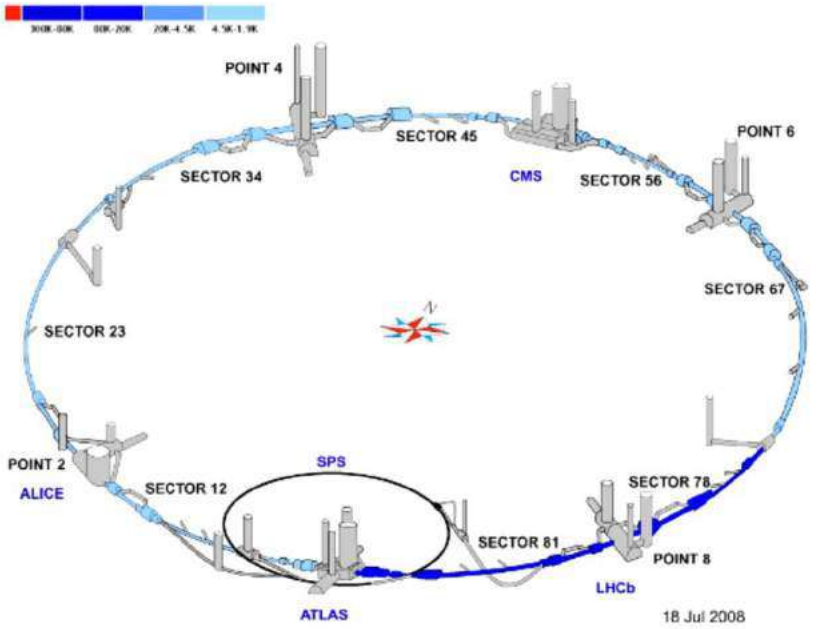
Most of what we know about atoms has been discovered by smashing them apart in Machine called PARTICLE ACCELERATORS.

Today, the World's biggest particles accelerator is located in an international laboratory called CERN [EUROPEAN COUNCIL OF NUCLEAR REASEARCH ; 29th September 1954] **EUROPEAN COUNCIL OF NUCLEAR REASEARCH** ; 29th September 1954] on the French-swiss border. CERN have currently 23 full time member and 13 associated members including INDIA and it is running the boldest and most expensive science experiments ever devised ; known as the **LARGE HYDRON COLLIDER [LHC]** : it's attempting to reproduce the condition that existed when the universe was formed in the BIG BANG , almost 14 billion years ago.

THE LARGE HYDRON COLLIDER [CREATED AT 1998 TO 2008 AND FIRST EXPERIMENT STARTED AT 2010]

The gigantic machine runs for 27 km in a circular tunnel buried 175 m underground. It whizzes two beam of atomic particles around the tunnel , in opposite directions , at up to 99.9999% the speed of light, and then diverts them so they smash together. These particles collisions are studied using four detectors spaced around the loop called ALICE , ATLAS , CMS , LHC-b.



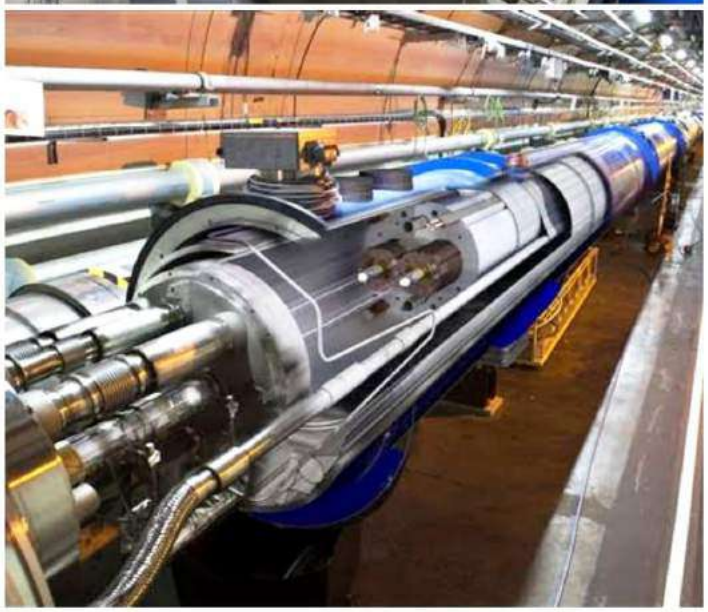


DO YOU KNOW?

The protons race around the loop more than 11000 times in one second .
10000 scientist from 100 countries involved in project
Every second there are 600 million collisions inside the LHC]

INSIDE THE TUNNEL

The tunnel contains thick blue pipe with two inner pipes inside it that carry the particles beam in opposite directions . Wrapped around the thin **pipes 1232 dipole magnets and 392 quadruple magnets,** which gives protons 99.999% speed of light , also it bends the particles beam steer them and then squeeze them together so they collide. Super powerful magnets in the tunnel contains enough cable **to wrap around the earth 6 times or cover the 2/3 distance between earth and moon.**



Do you know ?

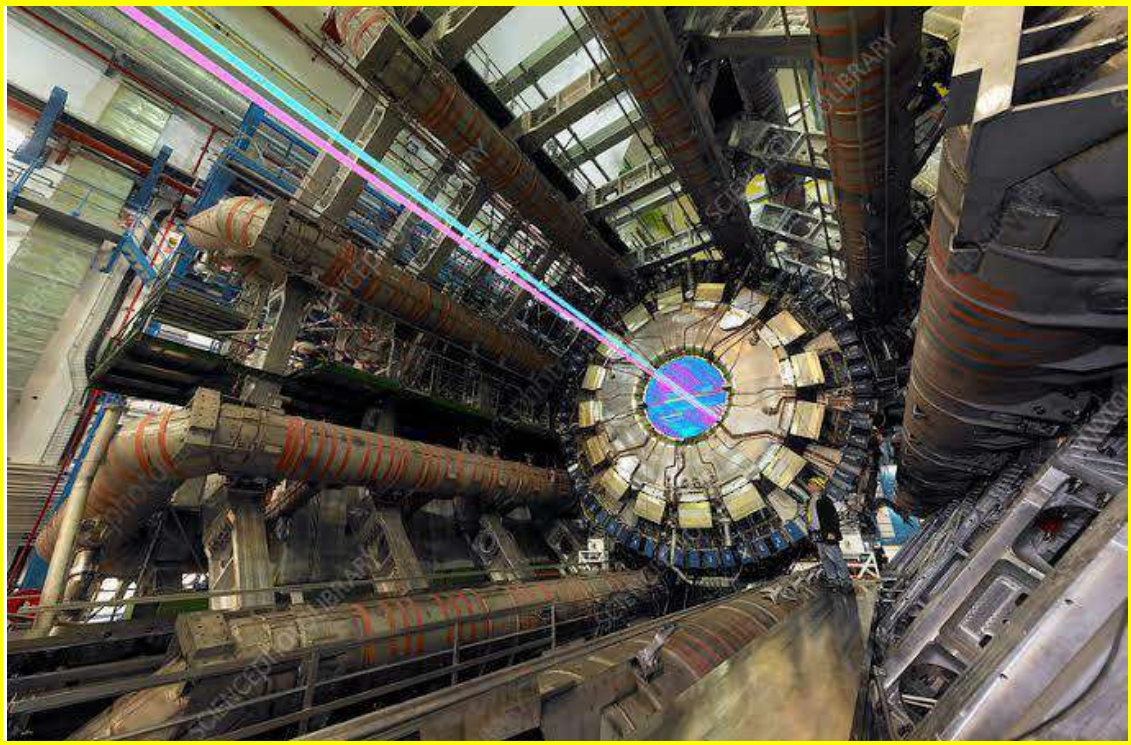
LHC TUNNEL IS THE WORLD'S LARGEST FRIDGE --- COOLED TO A TEMPERATURE [-271.3°C] LOWER THAN OUTER SPACE . {120 tonne liquid helium use for this purpose}

ALICE
This 10000 tonne machine smashes lead ions together to make a plasma that is

100000 times hotter than **Sun core. ALICE RECREATS THE CONDITIONS THAT EXISTED JUST AFTER BIG BANG**, when the atomic particles that make up our universe were first formed.

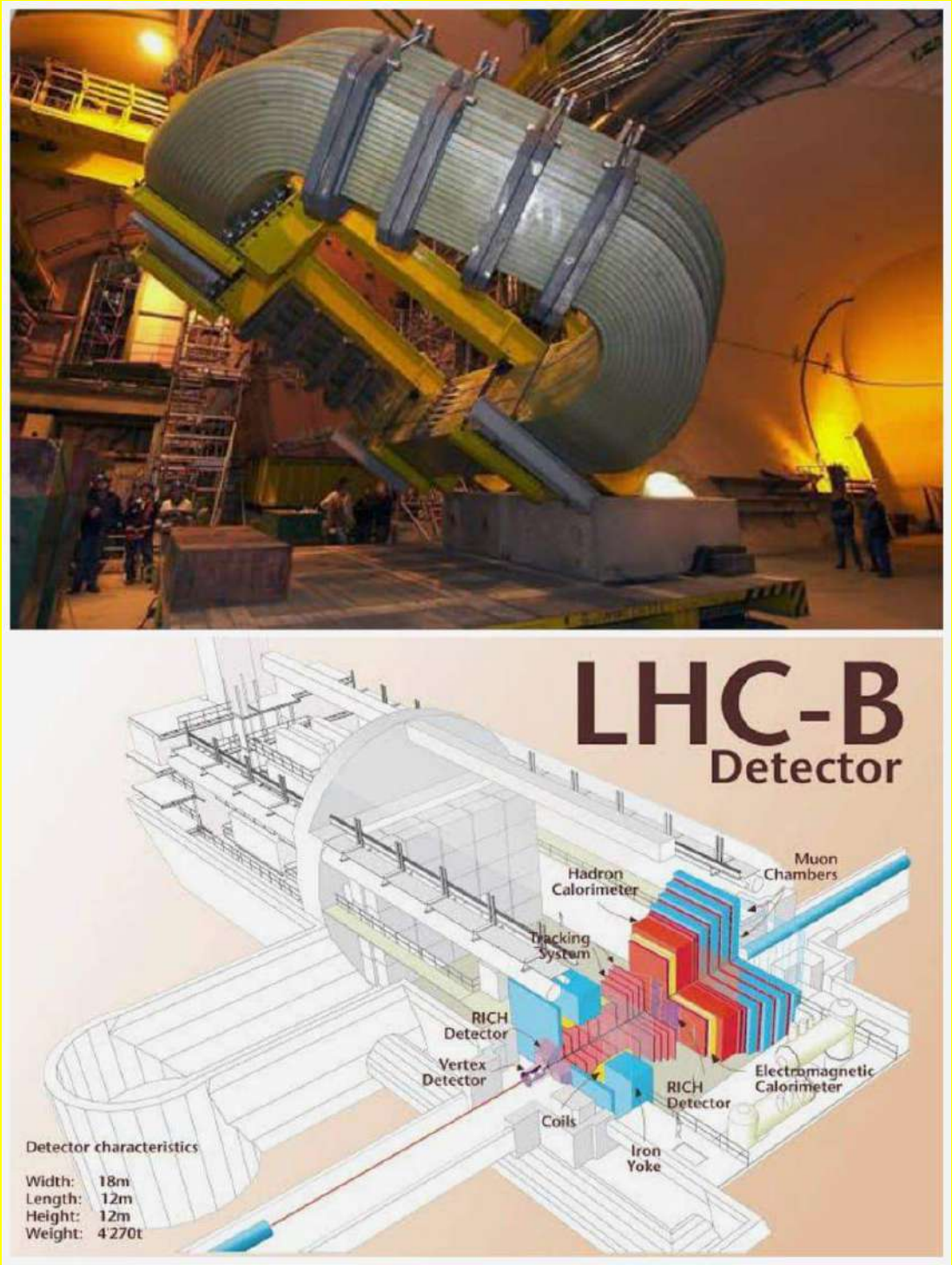
ATLAS

This detector uses a huge doughnut shaped system of magnets clamped around a beam pipe to watch collision between protons. **Higgs boson is invented [2011-13] with the help of it. Scientists hope this will help them to understand how other particles come to have their masses.**



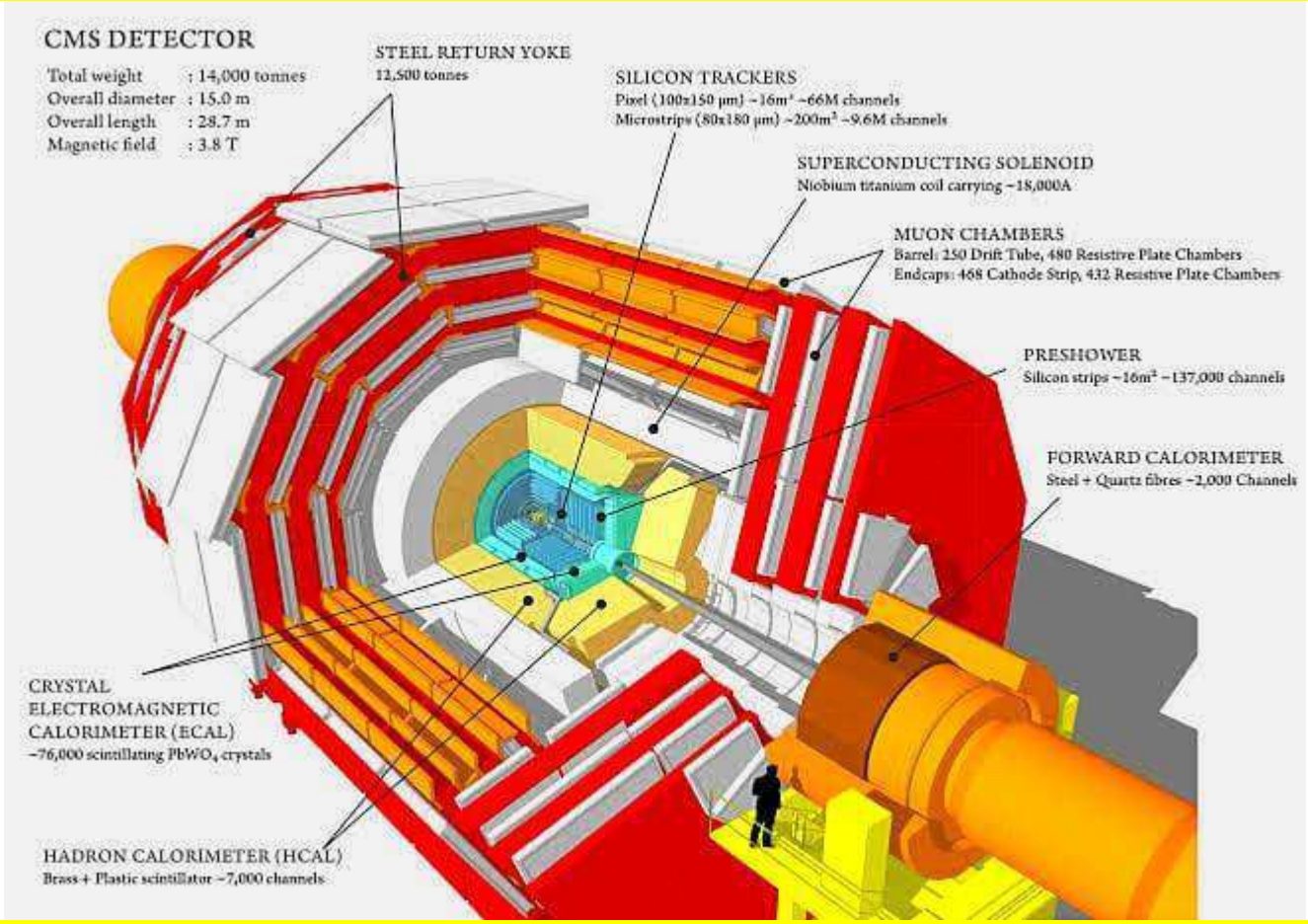
LHC-b

This detector investigate **ANTIMATTER and ANTI PARTICLES** which are mirror image of the particles such as protons, electrons .LHC not only creates antimatter but also joins them to create anti matter atom. Positron is the antimatter of electron whereas anti proton is the anti matter of proton. When a matter reacts with antimatter, it always give an explosion. **After, big bang there were equal number of matter and antimatter but anti matter now seems to have disappeared. LHC-b helps scientists to understand it**



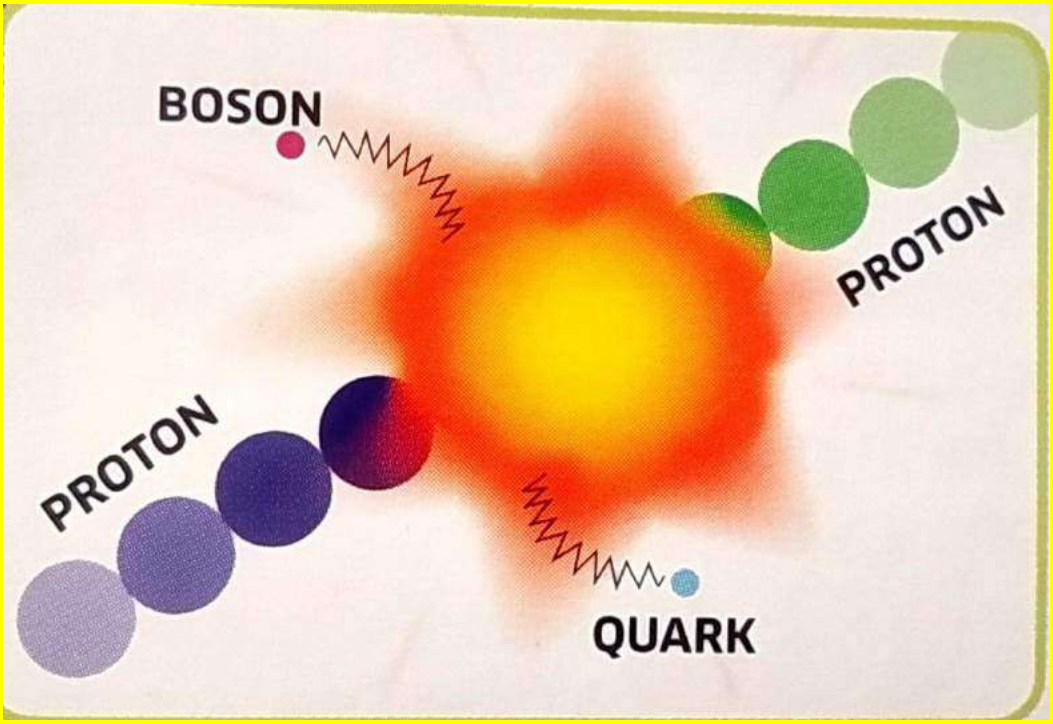
CMS

like atlas, CMS is designed to answers fundamental questions about the universe and matter. **It's a giant magnet** - with huge iron coil wrapped around a particle beam pipe - that produces magnetism **100000 times stronger than earth magnetic field.** It contains more iron than the **EIFFEL TOWER** and weighs more than 30 jumbo jets.



PARTICLE COLLISION IN LHC

Using LHC scientists discovered hundreds of particles inside the atoms. For example, colliding two protons gives **QUARK** and **BOSON.**

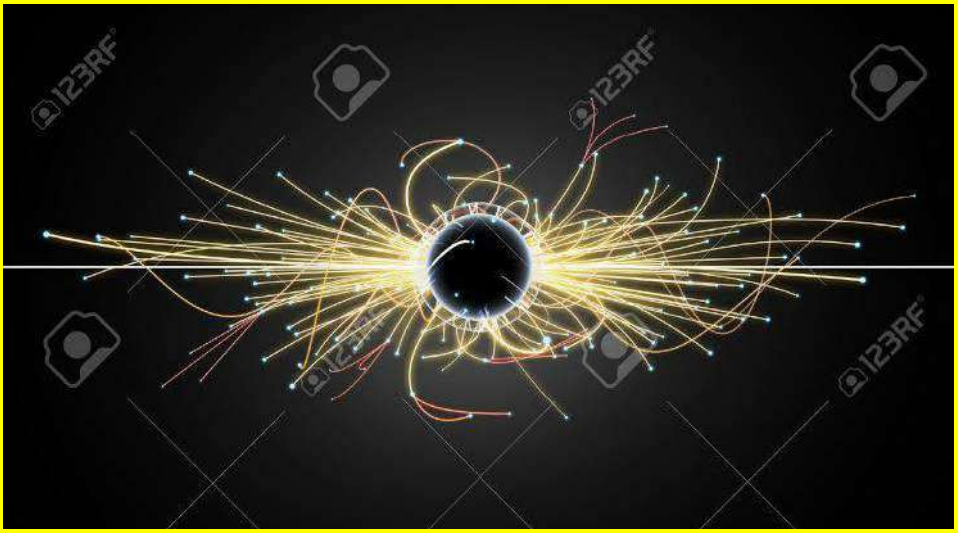


HYPOTHESIS : BLACK HOLE CREATES IN LHC
REALITY :

In 2008, two Spain's journalists [Luis Sancho and Walter Wagner] is going to court about this issue. But, in reality in LHC very low energy is generated in TERA ELECTRON VOLT order, so, If Black hole is generated in LHC, it is microscopic level [40 million time smaller than E.COLI bacteria] and evaporates in some Mili second dew to losses energy through Hawkins radiation

HYPOTHESES: WARM HOLE IS GENERATED IN LHC
REALITY :

IN outer space, there are many cosmic particles Collisions occurred always. But warm hole does not generated in any of the cases. So, warm hole is not generated in LHC.



INTERESTING FACTS

Earthquakes turn water into gold!!

Gold is formed when an earthquake widens a fluid-filled rock fracture, causing a drop in pressure, which in turn allows gold dissolved in the fluid to rapidly leach out. This process may underpin the formation of up to 80% of the world's gold deposits. While a single event may not deposit significant levels of gold, successive earthquakes in the same area can cause a build up of these deposits within the fracture eventually leading to economically viable gold concentrations.

Bananas are slightly radioactive!!

Yes, bananas are slightly radioactive. Bananas contain potassium and since potassium decays, that makes them slightly radioactive. But it's nothing you need to worry about. One would need to eat 10,000,000 bananas at once to die of radiation poisoning. Eating a banana exposes you to about 0.1 microsieverts of radiation. There's even a name for this amount : BED, or Banana Equivalent Dose.

MUGDHA BASU
Sem 5 (2021)

* TOXICITY OF METAL*

AN ARTICLE BY: BITHIKA ROY AND SNEHA DAS

Metal toxicity or metal poisoning is the toxic effect of certain metals in certain forms and doses on life. The heavy metals most commonly associated with the poisoning of humans are lead, mercury, arsenic, and cadmium. Some metals are toxic when they from poisonous soluble compounds. Some lighter metals such as beryllium, lithium have toxic effects also. Many of heavy metals, such as zinc, copper, chromium, iron, and manganese are essential to body function in very small amounts. But when these metals are abnormally high doses, then they are toxic for human body and as well as plants.

EFFECTS OF METAL TOXICITY IN HUMAN, PLANTS, AND MICRORGANISMS

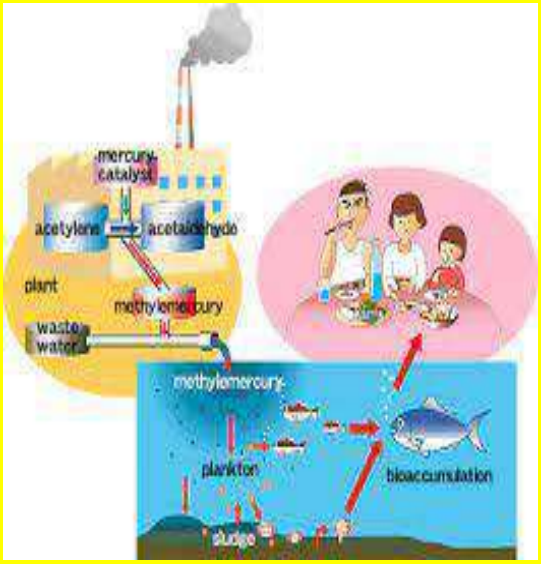
EFFECTS ON

METAL	SOURCES	HUMAN	PLANTS	MICRO-ORGANISMS
1. ANTIMONY (Sb)	coal combustion, Mining, smelting	cancer, cardiovascular diseases, Conjunctivitis,	Inhibit chlorophyll synthesis, growth inhibition	Inhibit enzyme synthesis. .

2. ARSENIC (As)	Atmospheric deposition, pesticides, mining	Black foot disease, melanosis, brain damage	Damage cell membrane, inhibit roots extension.	Deactivation of enzyme
3. BERYLLIUM (Be)	Coal and oil combustion, volcanic dust	Berylliosis, allergic reaction.	Inhibits seed germination	Mutarotation
4. Cadmium (Cd)	Fertilizers, plastic, wielding	Bone disease, itai itai, emphysema	Chlorosis, decrease plant nutrient	Denature of protein
5. Chromium (Cr) .	Dyeing, paints, textile	Bronchopneumonia, chronic bronchitis, diarrhea, lung cancer	Chlorosis, delayed wilting.	Elongation of lag phase
6. Copper (Cu)	Copper polishing, plating, mining	Abdominal pain, anemia, nausea, liver damage	Oxidative stress	Disrupt cellular function
7. Mercury (Hg)	Batteries, geothermal activities mining,	minamata disease (methyl mercury), decrease rate of fertility.	Effects ant oxidative system.	Denature protein.
8. Lead (Pb)	Electroplating, paint, pigments.	Damage of neurons, insomnia, renal system damage	Effects photosynthesis and growth	Denature nucleic acid

DETERMINE HEAVY METALS IN PLANTS:-

Plant samples digested with a solution of HNO3/HclO4 (3:1,v/v)at 145 DEGREE CENTIGRATE for 2 hr. Metal ion concentrations were determined by using inductively coupled plasma-atomic emission spectrometry.



THE END

THANKS TO ALL OF YOU

CHANDERNAGORE COLLEGE

DEPARTMENT OF CHEMISTRY

E-MAGAZINE

February,2023

‘ Serendipity In CHEM ’

Volume 2

“We can't solve problems by using the same kind of thinking we used when we created them.”

Albert Einstein

SERENDIPITY IN CHEM
EDITOR'S NOTE

On the occasion of 28th February, National Science Day, our department takes initiative to celebrate this programme. To observe this day we arrange an E-Magazine. This E-Magazine is published after hard work by all of our department day by day. This E-Magazine "SERENDIPITY IN CHEM" makes you think for Science. You must be amazed by every content. The amalgamation of writing on various topics by using visuals and graphics will keep you hooked up and feed your curiosity.

Special thanks to everyone who involved themselves in making of this E-Magazine from Day-1. Thanks to all our teachers for their supports and suggestions. Thanks again for all the supports received.

Our team

Graphic designing, cover designing, editing - Shourin Ghosh

Composing members –

Sem6, 2023

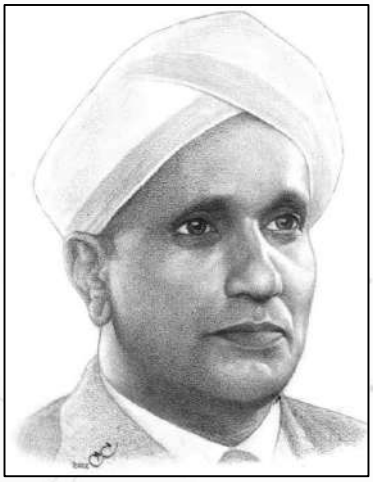
Ananta Biswas, Anik Das, Jeet Harijan, Oishi Adhikari, Pritam Chakraborty, Saikat Nayak, Sayan Roy, Shourin Ghosh, Shubhra Mete, Shuvangi Sil

Sem1, 2022

Meraj Waris

TRIBUTE TO C.V. RAMAN

C.V. Raman (Chandrasekhara Venkata Raman) was an Indian physicist born on November 7, 1888, in the city of Tiruchirapalli, Tamil Nadu. He is best known for his work on the scattering of light and for the discovery of the Raman Effect, which is a phenomenon in which a beam of light is scattered by molecules in a material, causing the wavelength of the light to shift.



Raman received his education at Presidency College in Madras and then went on to study at the University of Calcutta. He was awarded the Nobel Prize in Physics in 1930 for his discovery of the Raman Effect, becoming the first Indian and Asian to win a Nobel Prize in the sciences.

C.V. Raman, the Indian physicist and Nobel laureate, is honored on National Science Day in India, which is celebrated every year on February 28th. The day marks the anniversary of Raman's discovery of the Raman Effect in 1928.

The Raman Effect refers to the scattering of light by molecules, which causes a shift in the wavelength of the light. This discovery was a major breakthrough in the field of physics and earned Raman the Nobel Prize in Physics in 1930, making him the first Indian and Asian to win a Nobel Prize in science.

National Science Day is celebrated across India with various events and programs, such as science exhibitions, lectures, and quizzes, to promote scientific temper and encourage scientific innovation. The day is particularly significant for young students who are inspired by Raman's work and his dedication to the development of science and technology in India.

Raman's legacy continues to inspire and motivate scientists in India and around the world, and his contributions to the field of physics and science education are celebrated on National Science Day and beyond.

NOTE:- In Switzerland, National Science Day is celebrated to honour Dr. A.P.J. Abdul Kalam on 26th May.

CONTENTS

SERENDIPITY

Serendipity is the occurrence or discovery of something unexpected, fortunate, and valuable while searching for something else. The term originates from a Persian fairy tale named **"The Three Princes of Serendip"**, where the protagonists made many accidental discoveries through their travels and problem-solving abilities.

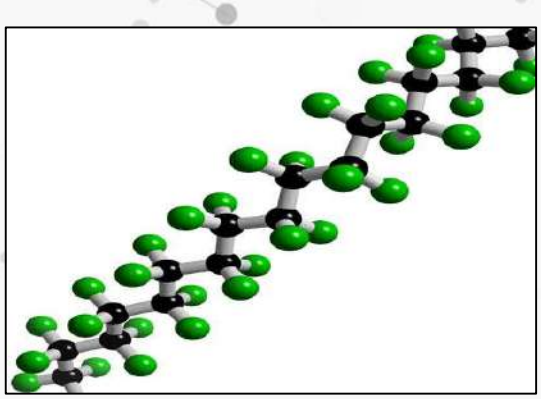
In everyday life, serendipity can refer to chance encounters, random events, or unexpected coincidences that lead to positive outcomes. It often plays a role in scientific discovery, where accidental observations or unexpected results lead to breakthroughs and new discoveries.

Serendipity is not just a matter of luck, but also the result of curiosity, openness, and the ability to recognize and seize opportunities. It can be cultivated by exploring new ideas, taking risks, and staying alert to the unexpected.

Overall, serendipity reminds us that the best opportunities can sometimes come from unexpected places, and that keeping an open mind and staying curious can lead to valuable discoveries and experiences.

An example of serendipity is the discovery of **Teflon by Roy Plunkett** in **1938**. He capitalised on a chemical accident and invented Teflon, one of the best known and most widely used polymers of all time.Interesting polymers have a history of turning up in unexpected ways. In 1938, chemist **Roy Plunkett** at **DuPont's Jackson Laboratory in New Jersey, US**, was studying fluoro hydrocarbon gases related to Freon refrigerants. When he opened a steel cylinder containing one of these, tetrafluoroethylene, under pressure, no gas came out. Perplexed, Plunkett sawed the cylinder in half and found inside a white, waxy residue. This was polytetrafluoroethylene, marketed by **DuPont as Teflon** and later to become the key to making a good fried egg.

Product of Teflon



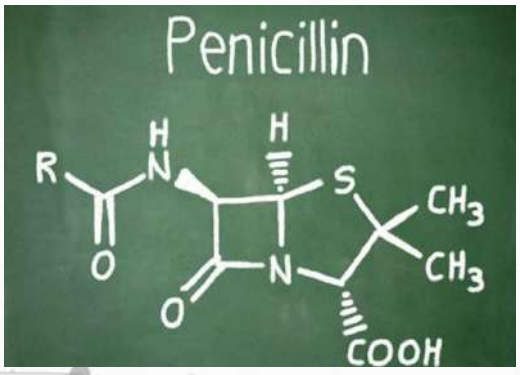
Structure of Teflon

PENICILLIN

Article by Anik Das

Discovery of the Wonder Drug of World War II : Penicillin

Returning from a vacation in **1928, Dr. Alexander Fleming** found a mould growing on a Petri dish of **Staphylococcus bacteria**, he left unprotected before leaving. The mould seemed to be preventing the bacteria around it from growing. He identified the mould produced a self-defence chemical that could kill bacteria. Identified belonging to **Penicillium genus, Fleming** named it as simply **Penicillin.**

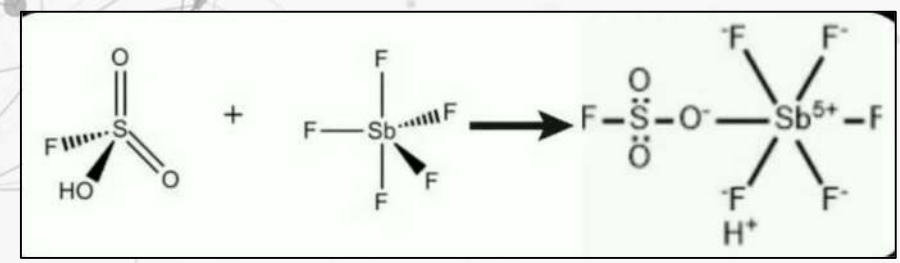


MAGIC ACID!

Article by Anik Das

The Olah lab & Magic Acid

In the **1960s**, researcher **George A Olah**, along with his co workers was trying to extract hydride groups from organic compounds for his research purpose. As such, a strong but poor nucleophilic acid was required. After a Christmas party in lab, when a member of the Olah lab left paraffin candle left overs into a container, they found that the candle dissolved quite rapidly. Then they recognised that the container had **fluorosulphuric acid(HSO_3F)** and **antimony pentafluoride(SbF_5)**. Being amazed by the results how a long hydrocarbon chain dissolved into a solution, they named the combination **'magic acid'**.

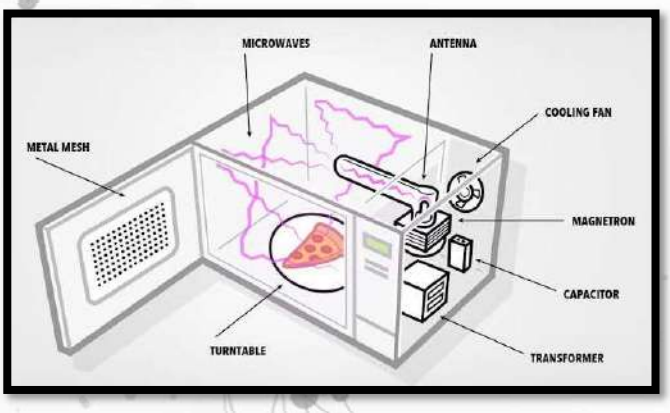


MICROWAVE

Article by Jeet Harijan

Journey of a magnetron to a microwave oven

1945 it was, an engineer named Percy Spencer was testing a high powered vacuum tube called magnetron for a radar project on defence giant, **Raytheon**. Suddenly he noticed the peanut butter candy bar in his pocket had begun to melt. Then he purposefully kept some popcorn kernles near the magnetron and witnessed how it turned to fluffy popcorns. Next was an egg's turn to go near this magnetron, the egg began to move about from high pressure built up inside and it exploded.



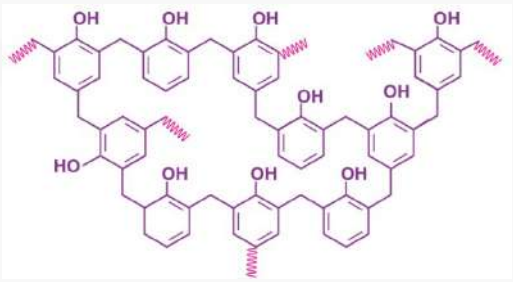
Spencer discovered that the low density energy from the magnetron could cook food quickly. He designed a metal box with an opening through which microwaves can be directed inside. The energy that got trapped inside the box created a high-density magnetic field. The resultant heat generation instantly cooked the food kept inside. This is how the **first microwave oven** was born.

BAKELITE

Article by Saikat Nayak

How came the modern era of plastics?

In search of a synthetic substitute for the shellac used in electronic insulation, **Leo Hendrik Baekeland in 1907** made first commercially used synthetic plastic, **Bakelite. Shellac** was expensive since it derived from Asian lac beetles. By combining **formaldehyde** and **phenol**, Baekeland unwittingly created a brand-new thermosetting resin that became ubiquitous in domestic and industrial manufacturing, paving the way for the modern era of man-made plastics.



HOW IS IT GUNPOWDER?

Article by Shourin Ghosh

While trying to discover a potion of immortality, Chinese alchemists of the Tang Dynasty accidentally discovered saltpeter, the main ingredient of gunpowder. Upon further experimentation, saltpeter was combined with charcoal and sulfur.

Chinese monks discovered the technology in the 9th century CE, during their quest for a life-extending elixir. The key ingredient, saltpeter, had been in use by this same culture since the late centuries BCE for medicinal purposes. It was found to be incendiary and immediately applied to warfare.

Earliest known written formula for gunpowder, from the Wujing Zongyao of 1044 AD

The main problem with gunpowder at this time was that the ingredients had to be measured properly in order for the mixture to ignite properly and explode. Thus, knowledge of the required materials was not so much the technology as was the knowledge of the formula.

Perfecting the formula can be noted as the first major landmark in technological development. The most effective ratio (very approximate) was believed to **be 1 part sulfur: 3 parts charcoal: 9 parts saltpeter**, according to 13th century Arabian documents. **Sir Roger Bacon** had been experimenting with something **29.5% sulfur, 29.5% charcoal, and 41% saltpeter**, however it was eventually found that the best ratio was **10:15:75** (the modern formula). The next big improvement came when **14th century** Europeans began adding liquid to the mixture, forming a paste that would dry and could be ground into balls--this came to be known as **"corned powder"**. This greatly increased the practicality of the primitive bombs and guns, as corned powder was more durable, reliable, and safe (the dried paste would insure that almost all of the ingredients would ignite at the same time and explode as one).

ZIEGLER-NATTA

Article by Oishi Adhikari

Without any doubt, the works on the polymerization of **olefins** by **Karl Ziegler** in Germany and by **Giulio Natta** in Italy had a striking impact on the academic and scientific role of macromolecular chemistry as discipline, and on the great development of polymer industry.

Giulio Natta Karl Ziegler

ZIEGLER NATTA CATALYST

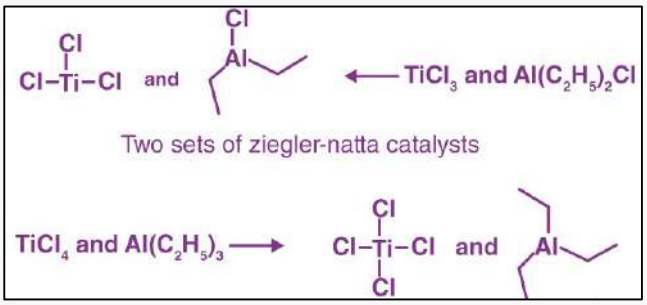
The typical Ziegler-Natta catalysts are combinations of **triethyaluminium ($AlEt_3$)** or **diethylaluminium ($AlEt_2Cl$)** with **titanium tetrachloride ($TiCl_4$) or trichloride ($TiCl_3$).** These catalyst systems are usually heterogeneous.

Historical Development of Ziegler-Natta Catalysts

In 1953, **Ziegler** and his co-workers accidentally discovered the activity of nickel as a catalyst in reactions of ethylene with aluminium alkyls. A linear polyethylene with High molecular weight was formed at normal ethylene pressure and at low temperatures. Following that, investigation was taken by **Ziegler and his co-workers** to determine What other metals might show the same activity Results showed that compounds of The transition metals of **group IV – VII** especially titanium, when combined with Aluminium alkyls, are effective polymerization catalysts. After Ziegler and his co-workers' discovery of the low-pressure polymerization Of ethylene, Natta, an Italian chemist has published a series of papers showing that higher olefins like propylene and 1-butene were able to be produced using **Ziegler's Catalysts** . Since then, these catalysts became Known as **Ziegler-Natta catalysts.**

Application of Ziegler' Natta Catalyst

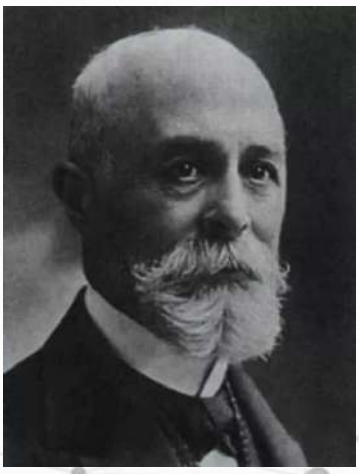
Majority of uses of Ziegler-Natta catalysts are for polymerization. The most Common olefins polymerized are **ethylene, propylene, 1-butene , 1-hexene and 1-octene.** Ziegler-Natta catalysts are commercially used by the industries to prepare **stereoregular polymers.** Ziegler-Natta catalysts can be used to produce **HDPE** which appears to have thelargest market among all polyolefins.



RADIOACTIVITY

Article by Pritam Chakraborty

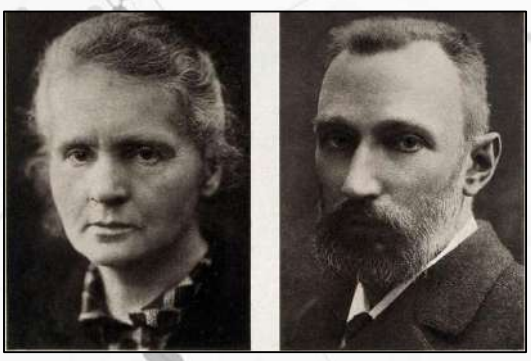
March 1, 1896: Henri Becquerel Discovers Radioactivity. In one of the most well-known accidental discoveries in the history of science, on an overcast day in March 1896, French physicist Henri Becquerel opened a drawer and discovered spontaneous radioactivity.



Becquerel

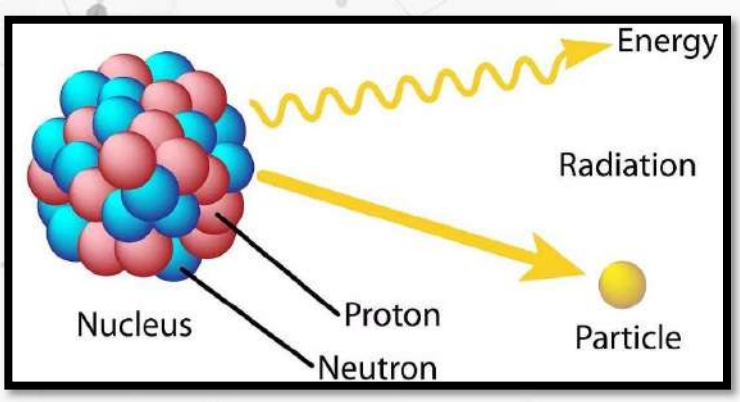
Becquerel wrapped a photographic plate in black paper and placed various phosphorescent salts on it. All results were negative until he used uranium salts. The uranium salts caused a blackening of the plate in spite of the plate being wrapped in black paper. These radiations were given the name "Becquerel Rays".

It soon became clear that the blackening of the plate had nothing to do with phosphorescence, as the blackening was also produced by non-phosphorescent salts of uranium and by metallic uranium. It became clear from these experiments that there was a form of invisible radiation that could pass through paper and was causing the plate to react as if exposed to light.



Marie Curie Pierre Curie

At first, it seemed as though the new radiation was similar to the then recently discovered X-rays. Further research by Becquerel, Ernest Rutherford, Paul Villard, Pierre Curie, Marie Curie, and others showed that this form of radioactivity was significantly more complicated. Rutherford was the first to realize that all such elements decay in accordance with the same mathematical exponential formula. Rutherford and his student Frederick Soddy were the first to realize that many decay processes resulted in the transmutation of one element to another. Subsequently, the radioactive displacement law of Fajans and Soddy was formulated to describe the products of alpha and beta decay.



Marie and Pierre Curie's study of radioactivity is an important factor in science and medicine. After their research on Becquerel's rays led them to the discovery of both radium and polonium, they coined the term "radioactivity" to define the emission of ionizing radiation by some heavy elements.Their research on the penetrating rays in uranium and the discovery of radium launched an era of using radium for the treatment of cancer. Their exploration of radium could be seen as the first peaceful use of nuclear energy and the start of modern nuclear medicine.

EARLIEST X - RAY

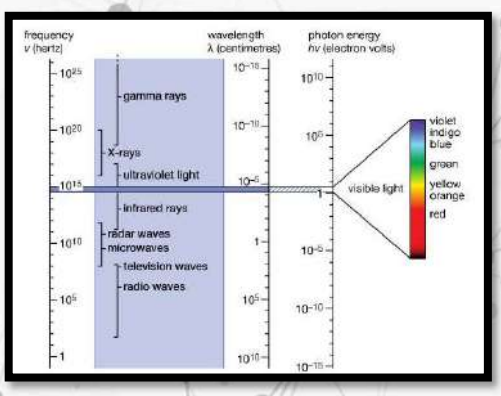
Article by Shubhra Mete

Like many scientists, Roentgen started out by experimenting on his wife. One of his first x-rays—if not the first—was of his wife Anna Bertha's hand with her wedding ring on her finger (above). She was reportedly unimpressed by the image; by some accounts, she exclaimed "I have seen my death!" after looking at it for the first time.

ONE OF THE EARLIEST X-RAYS WAS OF THE DISCOVERER'S WIFE'S HAND

X-rays have much higher energy and much shorter wavelengths than ultraviolet light, and scientists usually refer to x-rays in terms of their energy rather than their wavelength. This is partially because x-rays have very small wavelengths, between 0.03 and 3 nanometers, so small that some x-rays are no bigger than a single atom of many elements.

The discovery of the first cosmic X-ray source (besides the sun) occurred in 1962. Called Scorpius X-1, this extrasolar X-ray source is the strongest known source of X-ray in the sky. It is located about 9,000 light years away, in the Scorpius constellation. Today, many thousands of X-ray sources are known, though they are not as strong.



X-rays will always have an air of mystery. The "x" in "x-ray" stands for "unknown." Though scientists now know a lot about x-rays and what, exactly, they are, Roentgen named them x-rays because he detected the rays but didn't know quite what they were. Despite the new knowledge, we continue to call them "x-rays," which is a good reminder of the mystery surrounding their discovery and earliest use.

→X-RAY IN HEALTHCARE

Emil Grubbe (1875-1960), a student at Hahnemann Medical College in Chicago, noticed that the skin from his hand would fall off after putting his hand in an X-ray machine. He suggested trying the rays on a breast-cancer patient, Rose Lee, who was diagnosed as hopeless. Her cancer shrank and seemed to remit.

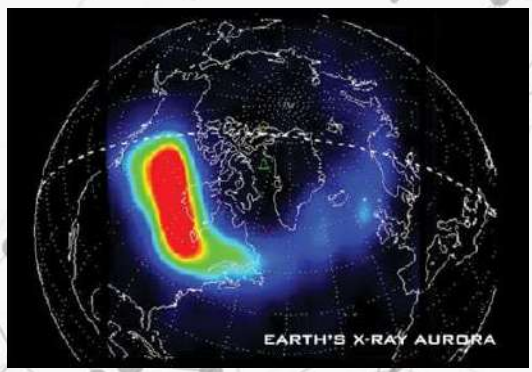
Radiotherapy was born. Early experimenters with x-rays noticed that the rays had a tendency to burn skin, a tendency made worse by the fact that older machines exposed people to much higher doses of radiation than today. But while overexposure to the rays can cause cancer, they can also cure it. Even back in Roentgen's day, doctors were using x-rays to burn off moles. Besides being used for diagnosis, today narrowly focused beams of x-rays are used in some forms of cancer radiotherapy to destroy tumor tissues.

→INTERESTING FACTS ABOUT X-RAY

Barium is a substance that is often used with X-rays. It is a chalky substance that you drink before they give you the X-ray. It was discovered in 1808 by a chemist named Sir Humphrey Davey. It is the 56th element on the periodic table and found to absorb the x-rays well in order provide accurate X-ray images. This enables your doctor to make an accurate diagnosis.

→EARTH'S AURORA IN X-RAYS

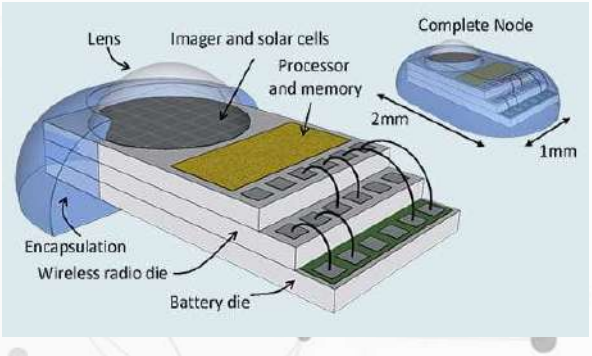
Solar storms on the Sun eject clouds of energetic particles toward Earth. These high-energy particles can be swept up by Earth's magnetosphere, creating geomagnetic storms that sometimes result in an aurora. The energetic charged particles from the Sun that cause an aurora also energize electrons in the Earth's magnetosphere. These electrons move along the Earth's magnetic field and eventually strike the Earth's ionosphere, causing the x-ray emissions. These x-rays are not dangerous to people on the Earth because they are absorbed by lower parts of the Earth's atmosphere. Below is an image of an x-ray aurora by the Polar Ionospheric X-ray Imaging Experiment (PIXIE) instrument aboard the Polar satellite.



SMART DUST; REALLY!

Article by Shuvangi Sil

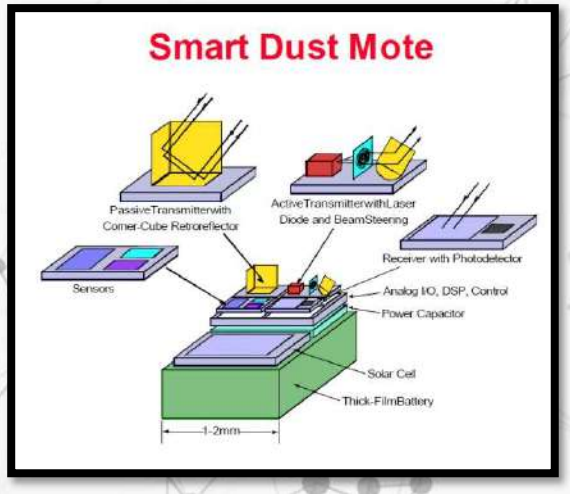
Smart Dust is a system of many tiny microelectromechanical systems, such as sensors, robots or other devices that can detect for example, light, temperature, vibration, magnetism or chemicals. Smart dust was initially the result of an unintentionally destroyed silicon chip. A Battery-Free, **Energy Harvesting Sensor** with **Integrated Pre-quantum Superposition Processor** and Artificial Intelligence that communicates wirelessly and bidirectionally to the cloud (RF-free and Zero Power)



The term **SMART DUST** was coined by **Kristofer Pister** of the University of California, Berkeley in 1997 to describe his wirless array of sensor nodes. Jamie Link, who was a graduate student attending the University of California at San Diego, discovered the programmable particles of silicon now known as smart dust in 2003.

→ MAKING A MOTE

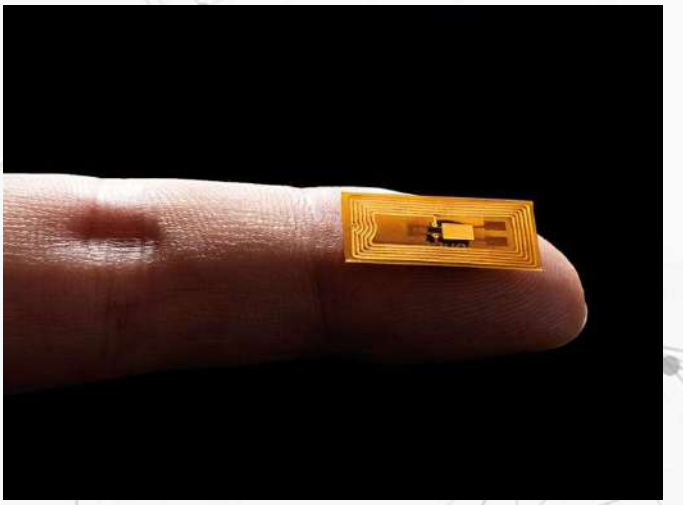
Silicon chips are used in computers and other electronic devices. A student, called Jamie Link, was working with silicon chips when one burst into pieces. She then discovered that the tiny pieces could still work as 'Sensors' to detect changes in all kinds of things. It is now possible to put tiny devices called 'motes' in different places to warn about changes. One of the things they are used for is detecting how much salt is concrete. It is helpful because salt can weaken concrete -- and no-one wants bridges to start falling down



→ APPLICATIONS

- These uses included both public and private sector uses and span a diverse range of use cases.
- One such use has potential benefits for homeland security for the purpose of detecting chemicals. The application could include chemical and biological weapons detection.
- This smart dust will join and create a red mark where the toxic chemicals are located. This could reduce the risk to civilians and military personnel by detecting these toxic chemicals before exposure.
- It could be used as an ingestible detection/diagnostic device to reduce the need for intrusive procedures. Future uses in the medical field could include detecting quadriplegic facial gestures and eye movements to assist them with wheelchair operation.

The most notable factor influencing the acceptance of smart dust is the privacy factor. Privacy would be a negative influencing factor for the acceptance of commercial applications due to the ease of one's privacy being compromised by the small size of the smart dust. The issue of privacy will not be as prevalent in the military applications acceptance, rather cost factors would be the driving factor. Smart dust, although being invented **unintentionally**, offers a bright future for **Nanotechnologies**.



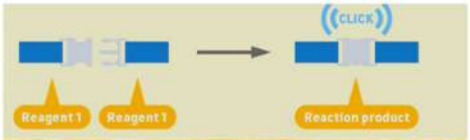
NOBEL '22

Article by Ananta Biswas

Click CHEMISTRY

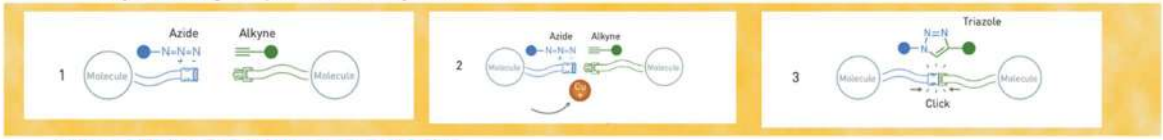
And BIOORTHOGONAL CHEMISTRY

Barry sharpless coined of " click" chemistry in 2001 : the idea of reactions that efficiently snap together small moleculear building blocks using easily achieved reaction conditions,avoiding unwanted byproduct



Independently, Barry sharpless and Morten Meldal developed the first click reaction,in which an azide is add to alkyne with a copper catyalyst .The two reagents click together to form a single cyclic product ,with the copper catalysts making the reaction quick and selective. Chemists could add usefull groups on to the azide add alkyne to change the product formed by the reaction.

Carolyn Bertozzi ,introduced the concept of bioothogonal chemistry chemical reactions that happen in cells without affecting their normal chemistry— in 2003.Copper is toxic to livingcells,so she modified the original click reaction toproduce a copper-free version. She u this reaction to track molecules called glycans on cell surfaces ,which she had investigating since in 1990.



Why click chemistry needed?

1-Historically,chemistry has sought to imitate nature.From medicine to fertilizer, the chemist has sought to make synthetic products that mimic natural molecules.

2-On the other hand ,several molecules have been synthesised in ingenious ways to create drugs and medicines to kill bacteria and relieve pain

How does click chemistry work?

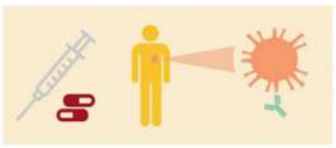
1–shaprless started on creating molecular building blocks —like Lego blocks — that could snap together quickly and efficiently.

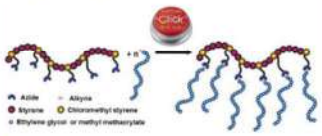
2– The first breakthrough came with discovering what has become the foundational stone of click chemistry,namely the copper catalysed azide— alkyne cycloaddition

3– Two kinds of chemical—azides and alkynes —react very efficiently when copper ions are added and form a very stable structure called a triazole

4— However,Bertozzi took click chemistry to a new dimension and showed that it could be used in living organisms.

5–copper is toxic to living cell ,but she figured out a way to produce a copper -free click reaction ,called the strain -promoted azide -alkyne cycloaddition ,and showed it could be used to teary tumours





WHY DOES THIS RESEARCH MATTER ?

Additional click chemistry have been developed ,usefull in the synthesis of new drugs .Bioorthogonal reactions allow researchers to study biological molecules and help identify targets of new drugs,and are also being trailed to produced 'clicckable'atibodies to target cancerous tumours.

ENVIRONMENT

An Article By: Meraj Waris

SCI BUZZ >

RARE EARTH ELEMENTS COULD BE PULLED FROM COAL WASTE

In Appalachia's coal country, researchers envision turning toxic waste into treasure. The pollution left behind by abandoned mines is an untapped source of rare earth elements.

Rare earths are a valuable set of 17 elements needed to make everything from smartphones and electric vehicles to fluorescent bulbs and lasers. With global demand skyrocketing and China having a near-monopoly on rare earth production — the United States has only one active mine — there's a lot of interest in finding alternative sources, such as ramping up recycling.

Pulling rare earths from coal waste offers a two-for-one deal: By retrieving the metals, you also help clean up the pollution.

Long after a coal mine closes, it can leave a dirty legacy. When some of the rock left over from mining is exposed to air and water, sulfuric acid forms and pulls heavy metals from the rock. This acidic soup can pollute waterways and harm wildlife.

ACID MINES >

Recovering rare earths from what's called acid mine drainage won't single-handedly satisfy rising demand for the metals, acknowledges Paul Ziemkiewicz, director of the *West Virginia Water Research Institute in Morgantown*. But he points to several benefits

Unlike ore dug from typical rare earth mines, the drainage is rich with the most-needed rare earth elements. Plus, extraction from acid mine drainage also doesn't generate the radioactive waste that's typically a by-product of rare earth mines, which often contain uranium and thorium

And from a practical standpoint, existing facilities to treat acid mine drainage could be used to collect the rare earths for processing. *"Theoretically, you could start producing tomorrow,"* Ziemkiewicz says.

FEASIBILTY >

ECNOMICAL PROSPECT

From a few hundred sites already treating acid mine drainage, nearly 600 metric tons of rare earth elements and cobalt — another in-demand metal — could be produced annually, Ziemkiewicz and colleagues estimate.

Currently, a pilot project in West Virginia is taking material recovered from an acid mine drainage treatment site and extracting and concentrating the rare earths.

If such a scheme proves feasible, Ziemkiewicz envisions a future in which cleanup sites send their rare earth hauls to a central facility to be processed, and the elements separated. Economic analyses suggest this wouldn't be a get-rich scheme. But, he says, it could be enough to cover the costs of treating the acid mine drainage.

AIRBAGS IN CARS

Article by Shourin Ghosh

Cars are our daily essential ride, it may be personal cars or Ola, Uber etc.. Usually we hardly think that there is any connections between automobiles and chemistry but mostly the batteries used to generate electricity in cars are made of Lithium, the burning of gasoline to run the car engine etc. As we know in India there is a factor of accident by cars so the health security of the drivers and passengers are ensured by Chemistry by the well known Airbags in cars. Air bags are not inflated from some compressed gas source but rather from the products of a chemical reaction. The chemical at the heart of the air bag reaction is called **sodium azide**, or **NaN_3**.

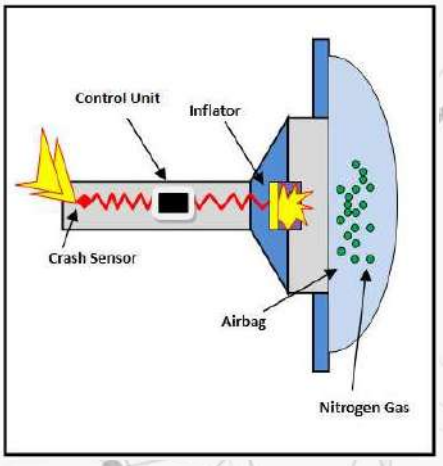
NEW CAR ASSESSMENT PROGRAM, CRASH TEST AREA

CRASHES trip sensors in cars that send an electric signal to an ignitor. The heat generated causes sodium azide to decompose into sodium metal and nitrogen gas, which inflates the car's air bags.

Under normal circumstances, this molecule is quite stable. If heated, though, it will fall apart. The chemical equation,

$$2\ NaN_3 \rightarrow 2\ Na + 3\ N_2$$

describes exactly how it falls apart. Notice that the second product of the above reaction is **N2, also known as nitrogen gas**. A handful (130 grams) of sodium azide will produce **67 liters of nitrogen gas**--which is enough to inflate a normal air bag. Whereas Sodium is a very reactive metal that will react rapidly with water to form sodium hydroxide. So to minimize the danger of exposure, air bag manufacturers mix the sodium azide with other chemicals that will react with the sodium and, in turn, make less toxic compounds.



There are sensors which send an electric signal to the canister that contains the sodium azide and the electric signal detonates a small amount of an igniter compound. The heat from this ignition starts the decomposition of the sodium azide and the generation of nitrogen gas to fill the air bag. What is particularly amazing is that from the time the sensor detects the collision to the time the air bag is fully inflated is only 30 milliseconds, or 0.03 second. Some 50 milliseconds after an accident, the car's occupant hits the air bag and its deflation absorbs the forward-moving energy of the occupant.

FIRE; GAS, LIQUID OR SOLID?

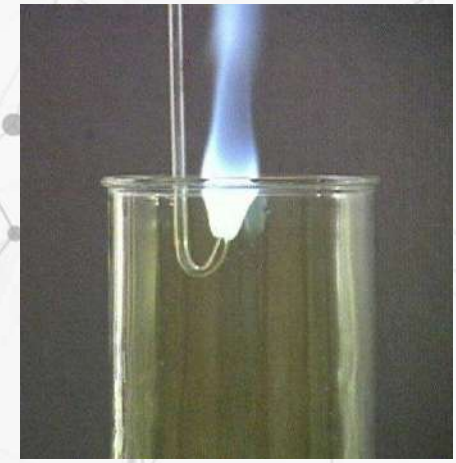
Article by Shubhra Mete

The ancient Greeks and alchemists thought that fire was itself an element, along with earth, air, and water. However, the modern definition of an element relates to the number of protons a pure substance possesses. Fire is made up of many different substances, so it is not an element.

For the most part, fire is a mixture of hot gases. Flames are the result of a chemical reaction, primarily between oxygen in the air and a fuel, such as wood or propane. In addition to other products, the reaction produces carbon dioxide, steam, light, and heat. If the flame is hot enough, the gases are ionized and become yet another state of matter: plasma. Burning a metal, such as magnesium, can ionize the atoms and form plasma. This type of oxidation is the source of the intense light and heat of a plasma torch.

While there is a small amount of ionization going on in an ordinary fire, most of the matter in the flame is a gas. Thus, the safest answer for "What is the state of matter of fire?" is to say it's a gas. Or, you can say it's mostly gas, with a smaller amount of plasma.

→FIRE WITHOUT OXYGEN



However, fire does not actually require oxygen. Yes, the oxidizer most often encountered is oxygen, but other chemicals also work. For example, burning hydrogen with chlorine as an oxidizer also produces a flame. The product of the reaction is hydrogen chloride (HCl), so the fire consists of hydrogen, chlorine, HCl, light, and heat. Other combinations are hydrogen with fluorine and hydrazine with nitrogen tetroxide.

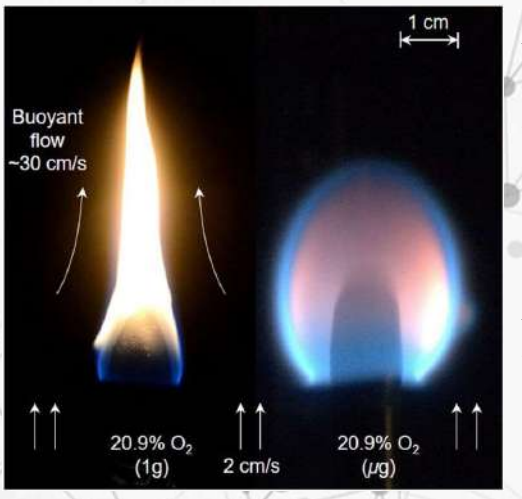
→ COLD FIRE

While all fire produced heat or is exothermic, some fires are cooler than others. So-called cold fire refers to a fire that burns below a temperature of about 400 °C (752 °F). At this temperature, the flame of the fire is invisible, yet the reaction proceeds. While cold fire is fairly uncommon on Earth, scientists have produced it in space. In a microgravity environment, fire burns with a spherical flame. Cold fire burns differently from regular combustion. Normally, the heat of a fire (and gravity) push combustion products away from the reaction.

In a cool flame, these products stay within range of the reaction and participate further. Ultimately, a cold fire can burn away its waste products. On Earth, cooler flames come from certain volatile fuels. For example, alcohol produces a cooler flame than acetylene. The availability of oxygen also matters. When oxygen is limited, so is the reaction, making the fire cooler.

→FIRE IN ZERO GRAVITY

When a fire starts, it heats up the air to become less dense. That low- density section of air heads upwards because gravity is pulling down on everything and colder and denser section of air muscle it out of the way to get closest to the earth. This is lucky for the fire because the only reason the air got hot was because the fire was consuming the oxygen. When low density air got pushed up and out of the way by the oxygen-rich air, the fire got a new delivery of fresh oxygen to burn. Without gravity, the fire would surround itself with a sphere of oxygen-free burnt gas, no supply of fresh oxygen to burn and the process would end in a small fraction of a second.



TOXICITY

Article by Sayan Roy

Metal toxification in human system

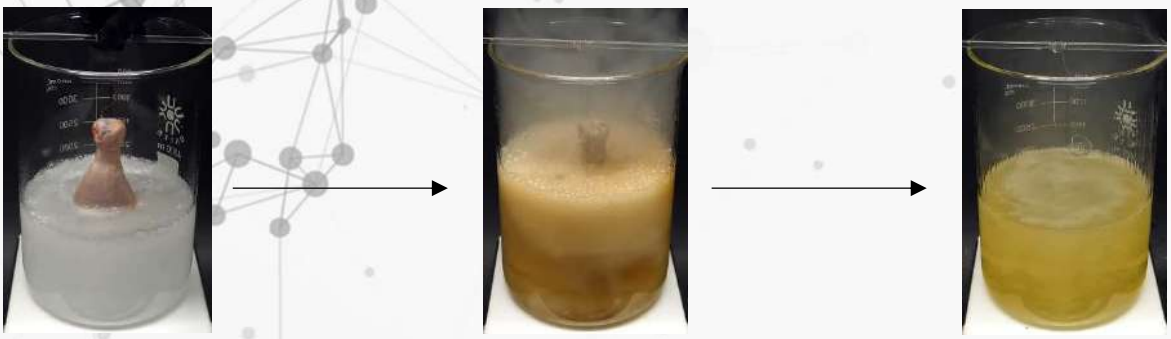
Aluminium contamination of food represents an important issue to find relationships between aluminium intake and certain serious illness such as Alzheimer's disease, Parkinson's disease, dialysis encephalopathy, bone disorder, human breast cancer, and it is also considered to be a neurotoxin; aluminium salts can be accumulated by the gut and different human tissues (bones, parathyroid, and brain). Aluminium is diversely affecting the growth rate of human brain cells.

PIRANHA!

Article by Sayan Roy

A Corrosive solution to organic material

Piranha solution, also known as piranha etch, is a mixture of sulfuric acid (H_2SO_4) and hydrogen peroxide (H_2O_2), used to clean organic residues off substrates.[1] Because the mixture is a strong oxidising agent, it will decompose most organic matter, and it will also hydroxylate most surfaces (by adding –OH groups), making them highly hydrophilic (water-compatible). This means the solution can also easily dissolve fabric and skin, potentially causing severe damage and chemical burns in case of inadvertent contact.



Digestion of flesh in Piranha Solution

COLOURING BLOOD!

Article by Sayan Roy

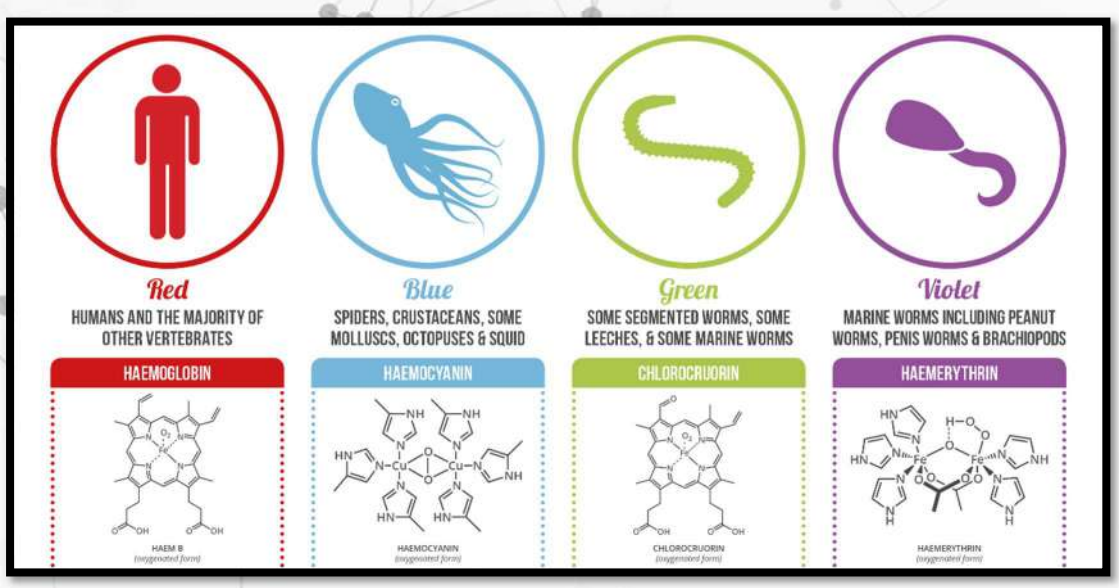
The chemistry of the different colours of blood

Red - It is found in Humans and in most vertebrates. Key component is Haemoglobin, is a protein. It is built up from subunits called 'haems'. These subunits contain Iron(Fe) ,and their structure gives blood its red colour in an oxygenated state. In deoxygenated it is deep red not blue!

Blue - It is found in spiders, crustaceans, molluscs, octopuses & squid. Key component is Haemocyanin, it contains Copper instead of iron. When deoxygenated the blood is colourless but when oxygenated, it gives blue colouration.

Green - It is found in some segmented worms, leeches & some marine worms. The blood of some species contains both haemoglobin and Chlorocruorin. Light green when deoxygenated, and in oxygenated state it is green.

Violet - It is found in Marine worms. Key component is Haemorythrin. It is ¼ as efficient at oxygenated transport. At deoxygenated state, haemorythrin is colourless but in oxygenated state it is violet- pink colour.



! FACTS !

HOT ICE!!

Sodium acetate, a chemical that can be supercooled, i.e., it can remain liquid below its normal freezing point. The amazing part of this reaction is initiating crystallization. Pour supercooled sodium acetate onto a surface and it will solidify as you watch, forming towers and other interesting shapes. This chemical is also known as "hot ice" because the crystallization occurs at room temperature, producing crystals that resemble ice cubes.

DID YOU KNOW?

Breaking a safety measure in 1965 while researching an antiulcer drug, scientist James M. Schlatter licked his finger to get a better grip. He noticed a sweet taste. OMG! It was aspartame.

DID YOU KNOW?

SOLID WATER AT 20°C!

When water and methane are mixed at high pressure, it forms a gaseous hydrate, which at a temperature of upto 20°C resembles packed snow.

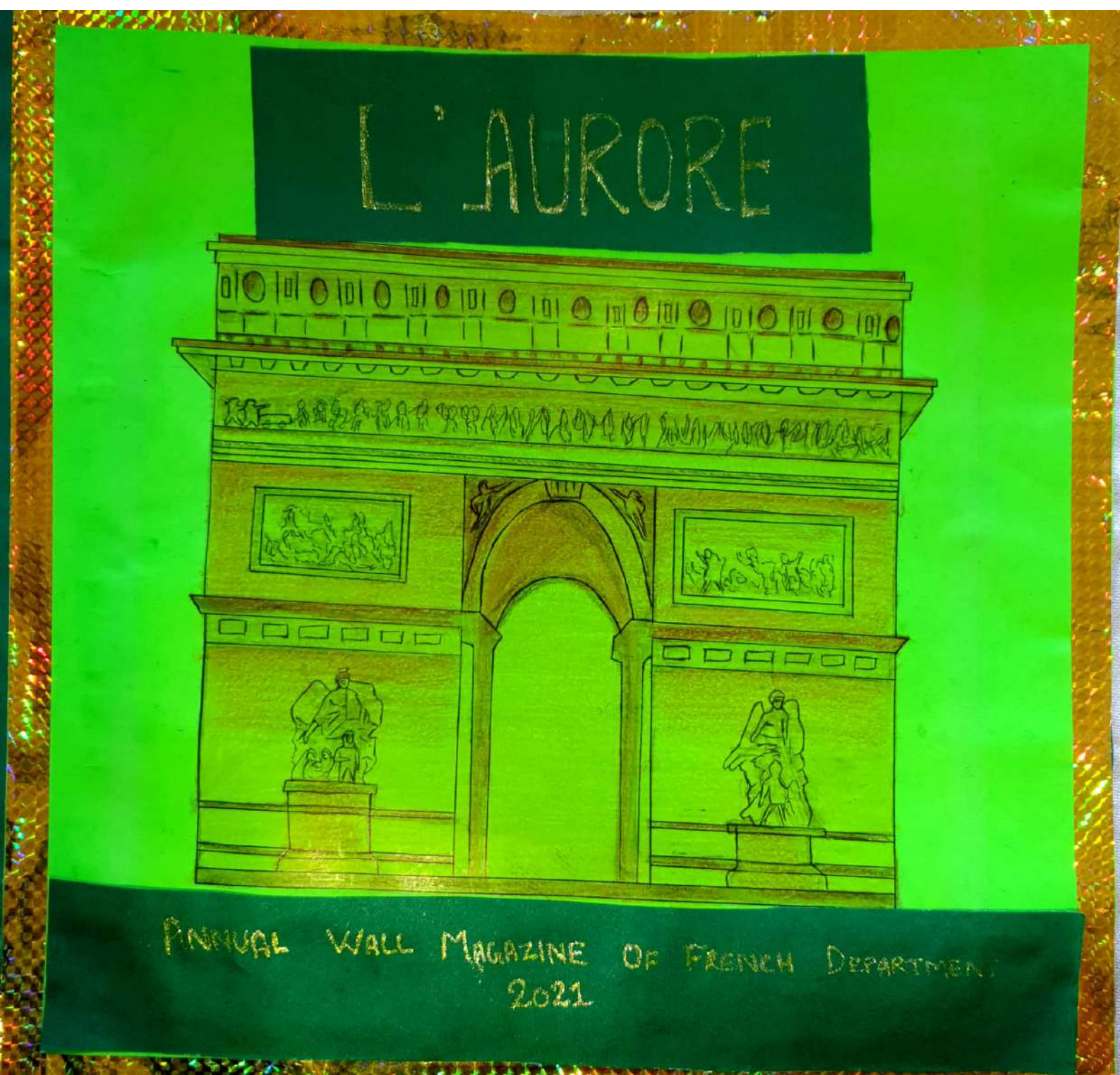
DID YOU KNOW?

ADDRESS IN CHEMISTRY!!

Famed chemist, Glenn Seaborg was the only person who could write his address in name chemical elements. He used to write Sr, Lr, Bk, Cf, Am. That's Seaborgium(Sr) named after Seaborg himself; Lawrencium(Lr) named after the Lawrence Berkeley National Laboratory; Berkelium(Bk) named after the city of Berkeley, home of UC Berkeley; Californium(Cf) named after the state of California; Americium(Am) named after America.

One bucket full of water contains more atoms than there are buckets of water in the Atlantic ocean

DEPARTMENT OF FRENCH WALL EXHIBITS



LA CIGALE ET LA FOURMI

Jean de la Fontaine

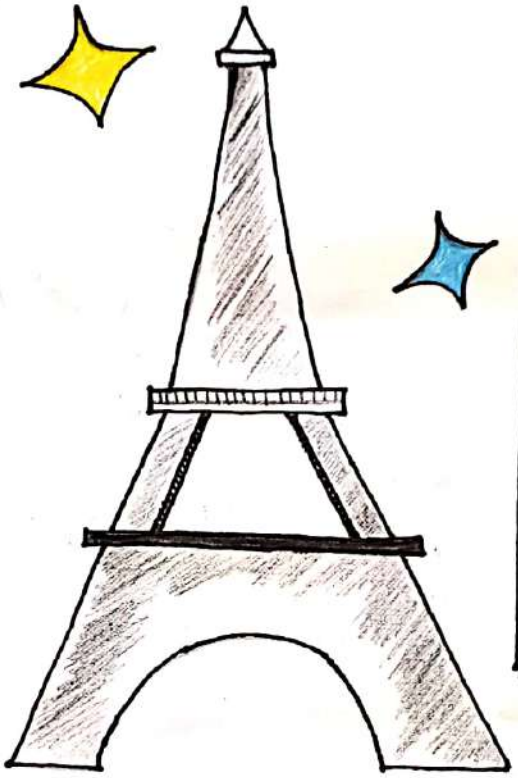
La Cigale ayant chanté
Tout l'été,
Se trouva fort dépourvue
Quand la bise fut venue
Pas un seul petit morceau
De mouche ou de vermisseau.
Elle alla crier famine
Chez la Fourmi sa voisine,
La priant de lui prêter
Quelque grain pour subsister
Jusqu'à la saison nouvelle.
Je vous paierai, lui dit-elle,
Avant l'Août, foi d'animal,
Intérêt et principal.
La Fourmi n'est pas prêteuse;
C'est là son moindre défaut.
«Que faisiez-vous au temps chaud?
Dit-elle à cette emprunteuse
Nuit et jour à tout venant
Je chantais, ne vous déplaise.
Vous chantiez?
J'en suis fort aise.
Eh bien! dansez maintenant.»

M.A. in FRENCH (ISISEM) Subhojit Kundu
29.08.2022

—Kankana Chatterjee

2nd Sem.

Bonjour France



La langue française

Cette langue vient du Latin. Le français est très populaire après anglais dans le monde. Les gens de presque 35 pays dans le monde parlent Français, Comme : Au Canada, en Suisse, au Luxembourg etc. J'aime beaucoup la langue française, de plus la littérature française est très riche. Si vous apprenez le français donc vous pouvez aller en France pour étudier supérieures. Enfin je voudrais dire que je veux visiter La France une fois dans ma vie qui est mon rêve.

Voyager La France

L'industrie tourisme de la France est très grande. La France est un endroit historique où on peut visiter des montagnes, des mers, des plateaux etc. La tour Eiffle, Notre Dame, Le musée du Louvre qui sont attirés beaucoup pour venir en France. La contribution de voyager et tourisme appuyer des emploie 2.9 million de personnes en France.

Sneha Sahar.
4th sem

Le gastronomie française —

Cuisine française est très connue dans le monde. On peut goûter des plats traditionnels en France Il y a diverse sorte des plats ont considéré des plats national français comme : Quiche lorraine, steak frites Patisserie, Macaron, Tarte, Escargots de Bourguignonne.

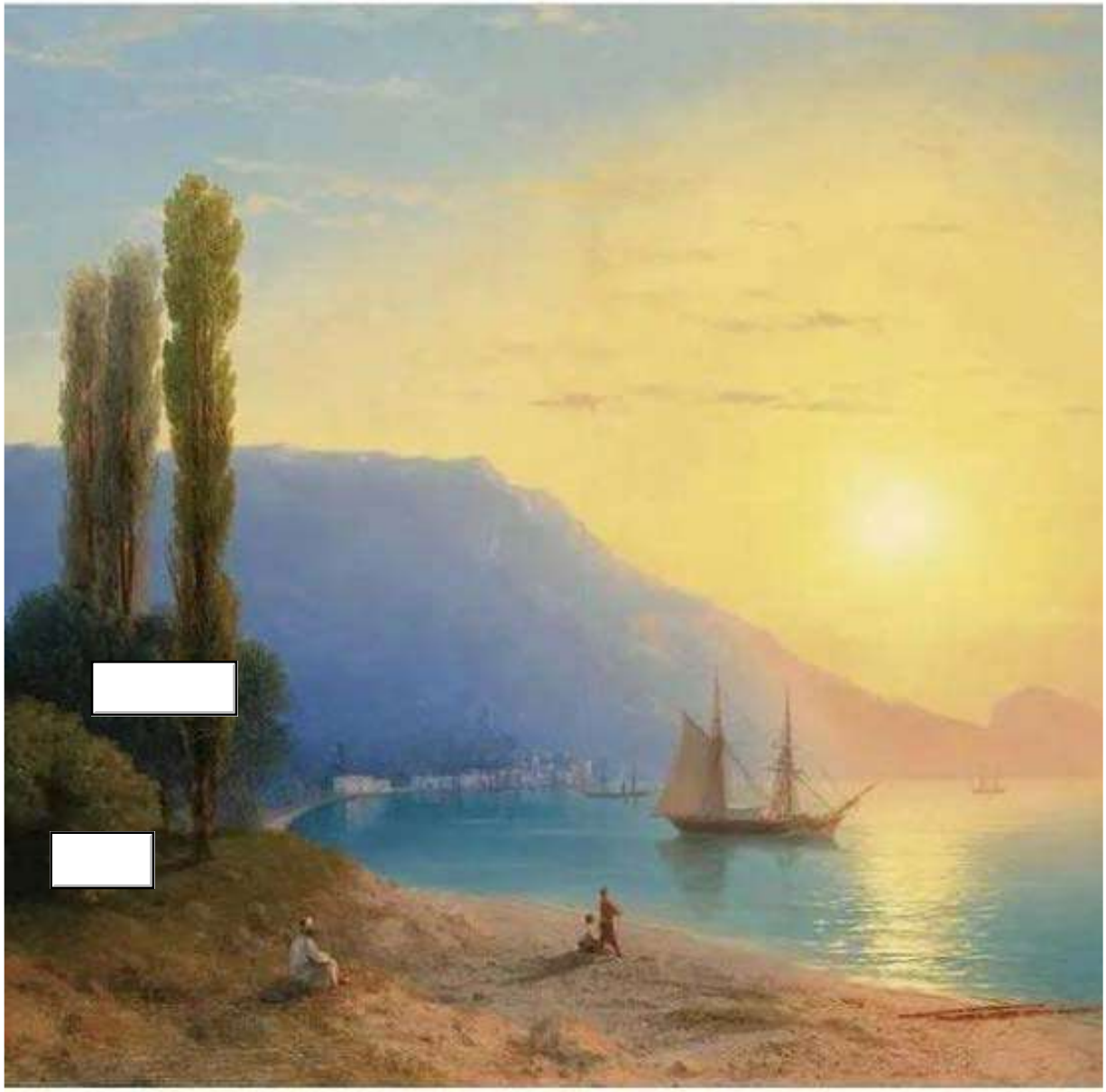
J'aime beaucoup du poulet au vinaigre, des crêpes caffé au chocolat etc. le croissant est une patisserie français qui est très

l'amitié entre La France et l'Inde :

La relation dans La France et l'Inde augmente dans nos jours. Notre pays a obtenu des avions de chasse de la France. Ils pratiquent ensemble l'enseignement militaire. Beaucoup de entreprises française travaillent en Inde et des entreprises Indienne travaillent

DEPARTMENT OF ENGLISH

Close



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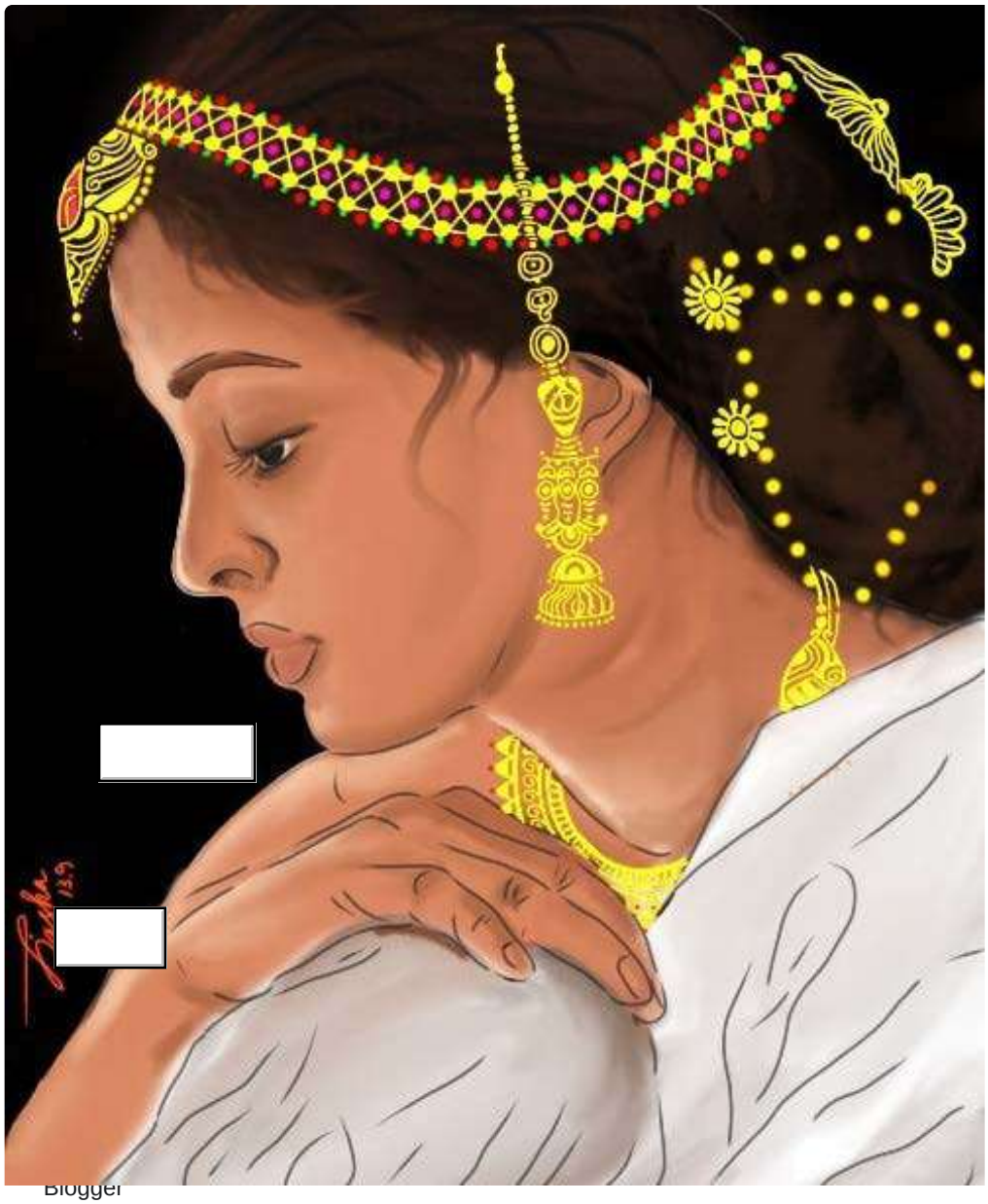

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L'AURORE

ANNUAL WALL MAGAZINE
OF FRENCH DEPARTMENT

2021-2022

♦ L'AURORE ♦

2021 - 22

1. Sohini Manna – Sem - III
2. Maitrayee Adhikary – Sem - III
3. Kankana Chatterjee – Sem - III
4. Subhojit Kundu – Sem - III (P.G)
5. Liza Chakraborty – Sem - I
6. Shruti Mukherjee – Sem - I
7. Abhrajit Mondal, Supratim Mukherjee – Sem - I

Astérix et Tintin

Astérix ou Les Aventures d'Astérix est une série de bandes dessinées sur un village d'indomptables guerriers gaulois qui s'aventurent à travers le monde et combattent la République romaine, à l'aide de potion magique, à l'époque de Jules Cesar. La série a été écrite par René Goscinny. Elle est apparue pour la première fois dans Pilote en 1959.

Les Aventures de Tintin est une série de 24 albums de bande dessinée créés par le dessinateur belge Hergé. La série était l'une des bandes dessinées européennes les plus populaires du XXe siècle. La série paraît pour la première fois en français dans le Petit Vingtième en 1929.

~Kankana Chatterjee
SEM - III

-Kankana Chatterjee

LE CORBEAU ET LE RENARD

Maître Corbeau, sur un arbre perché,
Tenait en son bec un fromage.
Maître Renard, par l'odeur alléché,
Lui tint à peu près ce langage:
Et bonjour, Monsieur du Corbeau.
Que vous êtes joli!
Que vous me semblez beau!
Sans mentir, si votre ramage
Vous êtes le Phénix des hôtes de ces bois.

À ces mots, le Corbeau ne se sent pas de joie;
Et pour montrer sa belle voix.

Le Renard s'en saisit, et dit:
Mon bon Monsieur,
Apprenez que tout flatteur
Vit aux dépens de celui qui l'écoute.
Cette leçon vaut bien un fromage,
sans doute.
Le Corbeau honteux et confus
Jura, mais un peu tard, qu'on ne
l'y prendrait plus.

Jean de La Fontaine
Les Fables de la Fontaine.

Subhojit Nanda
20/06/2023
PG Sem III

AVRIL

Déjà les beaux jours, la poussière,
Un ciel d'azur et de lumière,
Les murs enflammés, les longs soirs;
Et rien de vert : à peine encore
Les grands arbres aux rameaux noirs

Ce beau temps me pèse et m'ennuie,
Ce n'est qu'après des jours de pluie
Que doit surgir, en un tableau,
Le printemps verdissant et rose,
Comme une nymphe fraîche éclose,
Qui, souriante, sort de l'eau !

— Gérard de NERVAL
(Odelettes.)

Liza Chakraborty 21/06/2023

Une allée du Luxembourg

Elle a passé, la jeune fille
Vive et preste comme un oiseau:
À la main une fleur qui brille,
À la bouche un refrain nouveau.

C'est peut-être la seule au monde
Dont le cœur au mien répondrait,
Qui venant dans ma nuit profonde
D'un seul regard l'éclaircirait!

Mais non, — ma jeunesse est finie...
Adieu, doux rayon qui m'as lui
Parfum, jeune fille, harmonie...
Le bonheur passait-il a fui!

Gérard de Nerval

Shruti Mukherjee
Sem — 1

Noël

Théophile Gautier

Le ciel est noir, la terre est blanche;
Cloches, carillonnez gaîment !
Jésus est né. La Vierge penche
Sur lui son visage charmant

Pas de courtine festonnées
Pour préserver l'enfant du froid,
Rien que des toiles d'araignées
Qui pendent des poutres du toit

Il tremble sur la paille fraîche,
Ce cher petit enfant Jésus,
Et pour l'échauffer dans sa crèche
L'âne et le bœuf soufflent dessus.

La neige au chaume coud ses franges,
Mais sur le toit s'ouvre le ciel
Et tout en blanc le chœur des anges
Chante aux bergers : « Noël ! Noël ! »

Abhrajit Mondal, Supratim Mukharjee
[SEM-I]

Ce jour.....

Name- Urmi Paul
Sem-IV

Ce jour, je me promenais
C'était un très beau jour d'été
Je suis allée à la cafétéria
Et, je me suis assise.

Ce jour, j'étais assise près de la fenêtre
Un homme inconnu est arrivé
Il s'est assis de l'autre côté
Il est tourné vers moi et souriait.

Ce jour, son sourire était comme
Un doux rayon doré du soleil
Qui était glissé tout le matin
Dans ma chambre.

Ce jour, soudain quelqu'un m'a appelé
Je voyais c'était lui
Il était comme un papillon
Il était jeune, gentil et beau.

Ce jour, son sourire était joué
Dans mes cheveux
Et, semble me dire
« Lève-toi, c'est déjà l'heure. »

Ce jour, je l'ai vu partir.
Quelque part de la sombre
Il a de disparaître peu à peu
J'ai eu peur.

Ce jour, je me réveillais tout de suite
Il y avait de la buée, sur la vitre
Et, il pleuvait dehors
Le temps s'était arrêté.

Le silence était partout
Je ne sais pas qui était lui
C'était une étrange sensation d'amoureuse
« Il me semble que le papillon vole. »

L'AURORE

ANNUAL WALL MAGAZINE OF FRENCH DEPARTMENT

2022-23

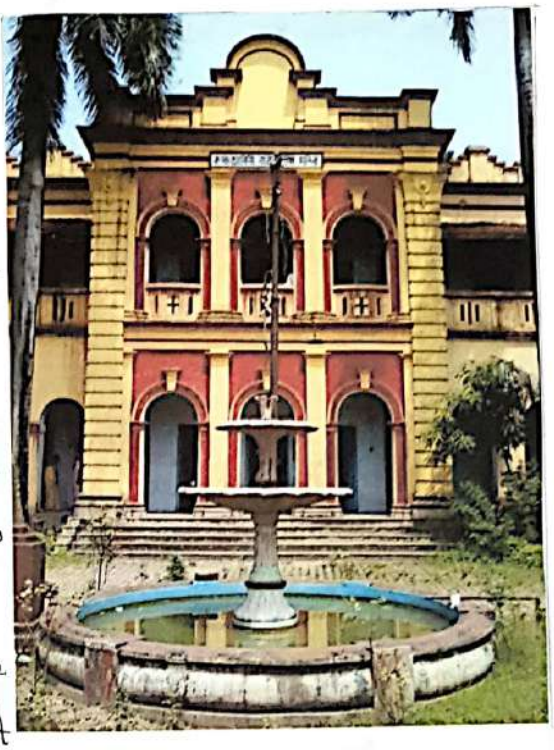
◆ L'AURORE ◆

2022 - 23

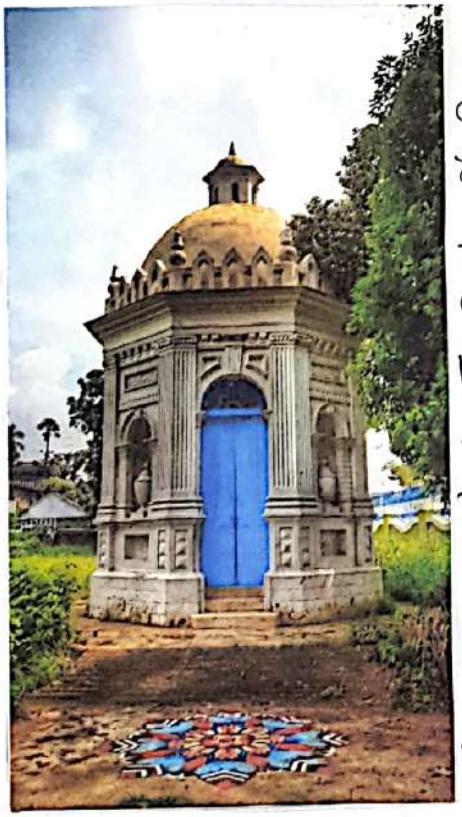
1. Kankana Chatterjee – Sem - IV
2. Subhojit Kundu – Sem - IV (P.G)
3. Sohini Manna – Sem - IV
4. Sohini Manna – Sem - IV
5. Maitrayee Adhikary – Sem - IV
6. Shruti Mukherjee – Sem - II
7. Tina Ghosh – Sem - II
8. Rajnandini Das, Tuhina Chatterjee – Sem - II

Mon École D'Enfance

Krishna Bhabini Nari Siksha Mandir



L'Ecole est un endroit où on apprend et grandi. C'est un endroit où l'on se fait des amis et des souvenirs. On découvre le monde qui nous entoure. On apprend à lire, écrire, penser de manière créative et critique. L'école joue un rôle très important dans notre vie.



J'étais une étudiante de Krishna Bhabini Nari Siksha Mandir. C'est une école de filles bien connue à Chandernagor. Elle a été créé en 1926 par Haridhar Sett. C'est l'institution où j'ai commencé à apprendre la langue Française. J'ai beaucoup de souvenirs dans cet endroit. Dans mon école il y a un Jardin de fleurs, un parc, un temple où le Saraswati puja est célébré. Les enseignantes sont très gentilles. J'aime mon école.

~ Kankana Chatterjee
SEM - IV

Mon petit chat

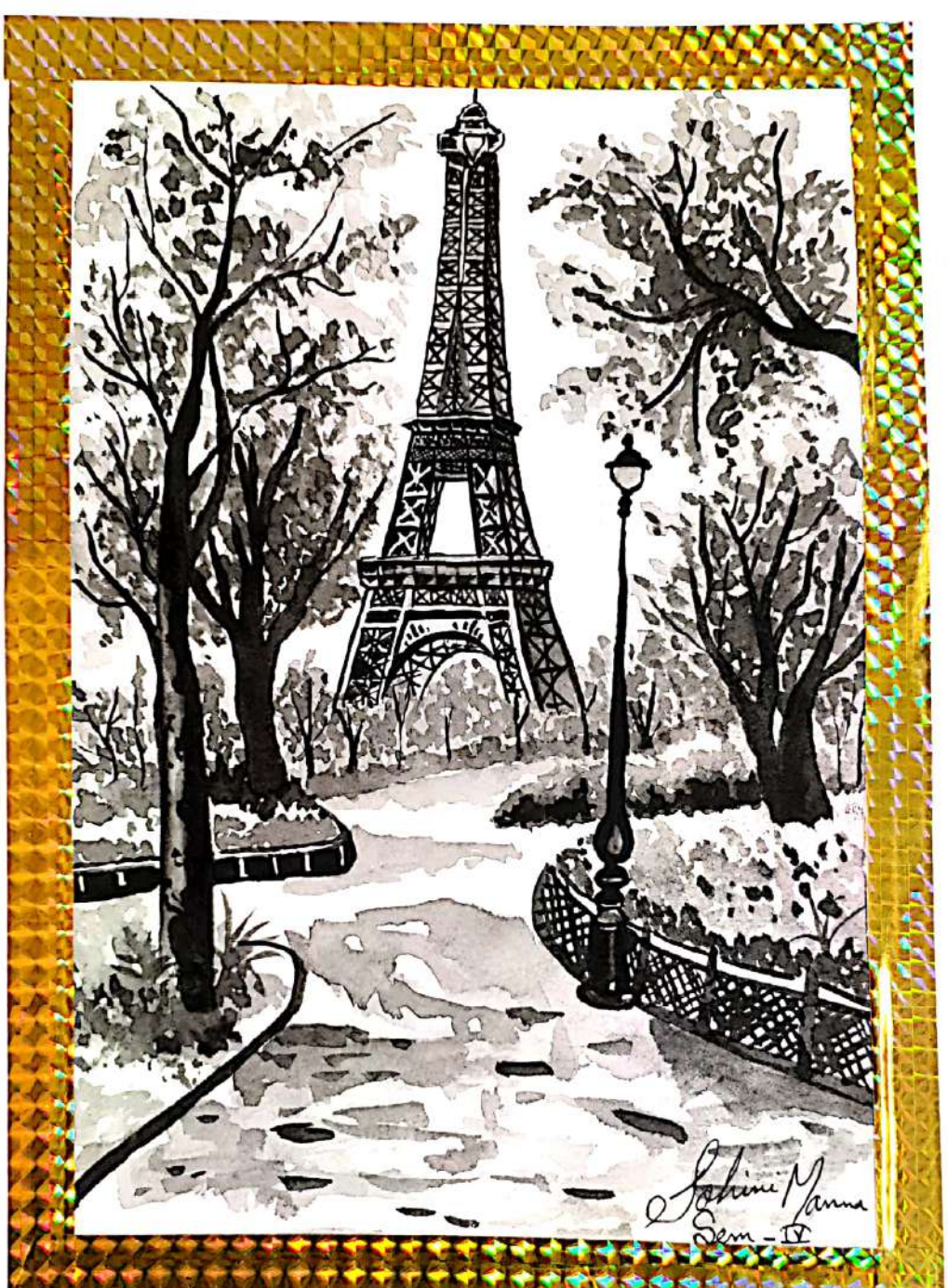
~ Écrit par Maurice CARÊME

J'ai un petit chat,
petit comme ça.
Je l'appelle Orange.
Je ne sais pourquoi
jamais il ne mange
ni souris, ni rat.
C'est un chat étrange
aimant le nougat
et le chocolat.

Mais! c'est pour cela,
dit toute Solange,
qu'il ne grandit pas.

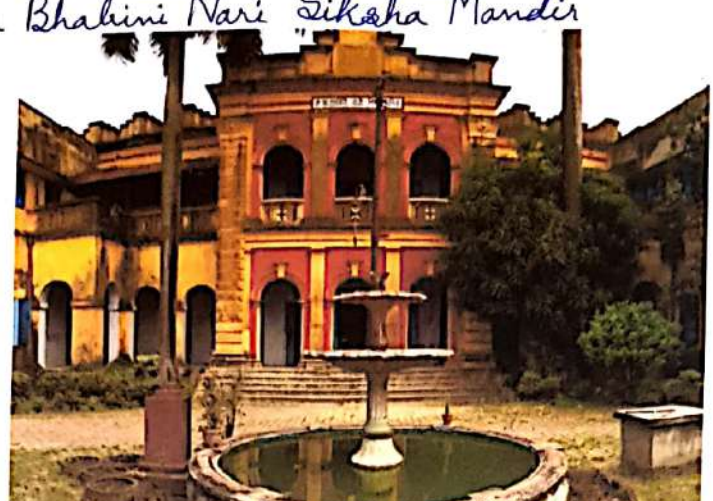
~ Ronds de Lumière
Éditions de l'École.

Subhojit Kundu
20/06/2023
PG SEM IV



Mon École D'Enfance

Krishna Bhalini Nari Siksha Mandir

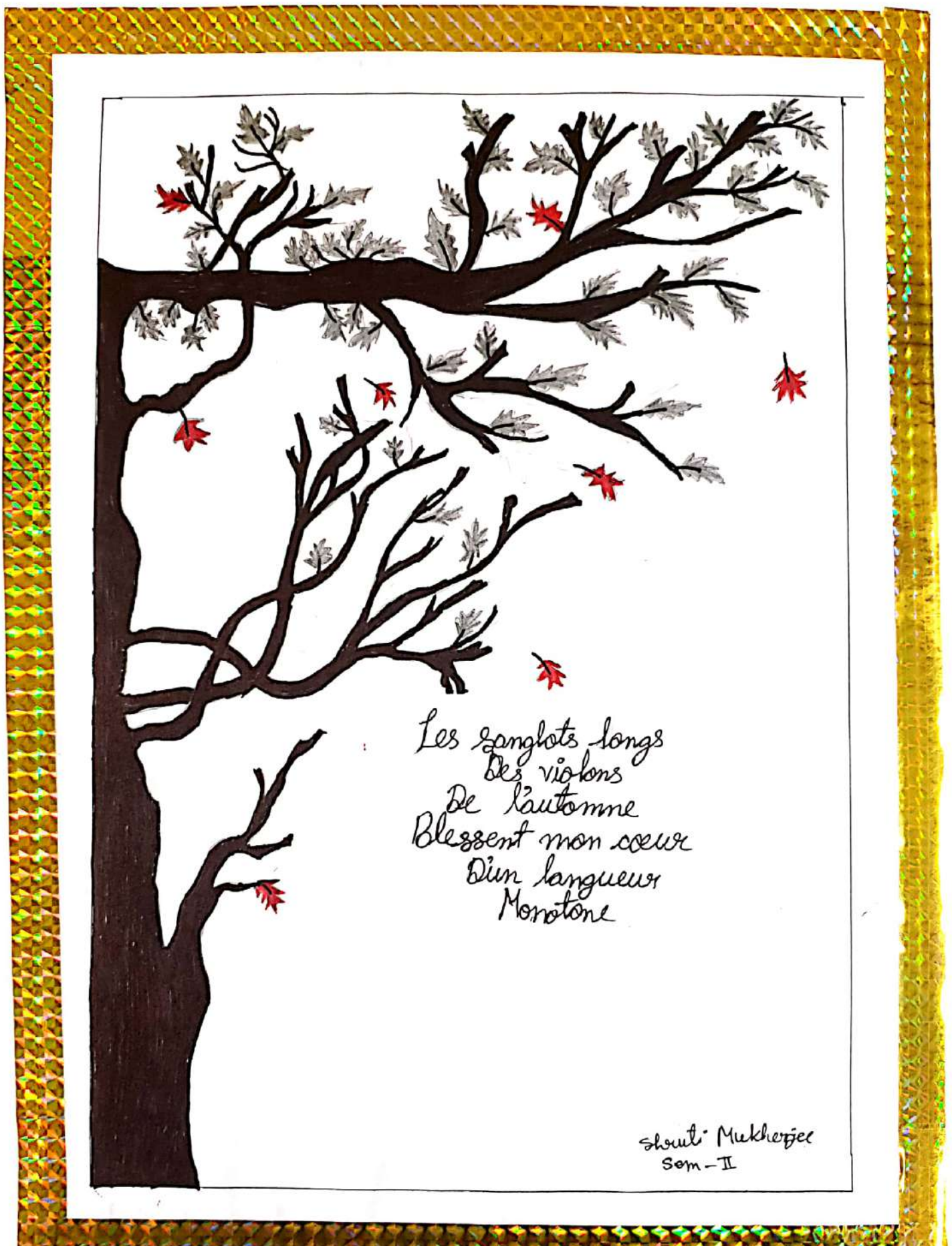


Le nom de mon école est Krishna Bhalini Nari Siksha Mandir. Il a été créé en 1926 par Harihar Sett au nom de sa mère Krishnabhalini Das. Dans le district de Hoghly, c'était le premier lycée pour filles. C'est mon second maison. J'apprends beaucoup de choses là. J'apprenais le français pour la première fois là et Je commençais à aimer cette langue. Dans mon école J'ai beaucoup de souvenir : Moi et mes amis nous amusions pendant la période tiffin et nous jouions beaucoup de choses. C'est peut être mauvais ou bon mais J'ai mon meilleur ami là - bas et c'est mon meilleurs souvenirs. J'ai beaucoup de chance d'y étudier et mes jours d'école me manquent beaucoup.

Sohini Manna

Sem - IV

Maitrayee Adhikary
SEM - IV



TROIS ESCARGOTS

J'ai rencontré trois escargots
Qui s'en allaient cartable au dos
Et dans le pré trois limaçons
Qui disaient par cœur leur leçon
Puis dans un champ, quatre lézards
Qui écrivaient un long devoir.

Où peut se trouver leur école ?
Au milieu des avoines folles ?
Et leur maître est-il ce corbeau
Que je vois dessiner là-haut
De belles lettres au tableau ?

Maurice CARÊME

Tina Ghosh
Sem-II
21/06/2023

L'Eglise du Sacré Coeur

L'église du Sacré-Coeur, Chandernagore est une église patrimoniale située à Chandernagore dans le district de Hoogly de l'état indien du Bengale du occidental. Actuellement l'église est sous la supervision de la Commission du partimonie du Bengale occidental. Sa structure est une expression authentique du style architectural français en Inde. Construite il y a plus de 200 ans, l'église catholique Chandernagore Sacred Heart est une église absolument magnifique conçue dans le style français. L'église a un extérieur en pierre blanche d'une beauté

exceptionelle et un intérieur tout aussi impressionnant. Il aurait été conçu par le célèbre architecte français, Jacques Duchatz. Au coucher du soleil, l'église apparaît encore plus magnifique. En visitant l'église catholique du Sacré-Coeur de Chandernagore, non seulement vous pourrez

admirer l'architecture saisissante, mais vous pourrez également avoir un aperçu de l'histoire du lieu.

RAJNANDINI DAS, TUHINA CHATTERJEE.

DEPT. of FRENCH SEM-II

Government of West Bengal
DEPARTMENT OF HISTORY
CHANDERNAGORE COLLEGE
Chandernagore, Hooghly Pin-712136

NOTICE

No. HISH/10/21/08/23

Date: 21/8/2023

It is hereby notified that the inauguration of a wall magazine named SPHULINGA: BIPLAB O CHANDERNAGORE (ISSUE-1) will be held on 24.08.2023 at 12.30 PM in front of Room No. 205 of Gurudev Kala Bhavan.All students and faculty members are requested to be present.

Soumya Goswamy

Soumya Goswamy
Head
Department of History

অনিয়ন্ত্রিত আগ্নেয়াস্ত্র

he 25th anniversary of Pokhran II

shroom cloud

Poedition of Bengali cartoon.


স্কুলস্ট
GPS Map Camera
Chandannagar, West Bengal, India
V959+GQR, Gali Rd, Barabazar, Chandannagar, West Bengal 712136, India
Lat 22.85864°
Long 88.369326°
24/08/23 01:01 PM GMT +05:30
Google


স্ফুলিঙ্গ

চন্দননগরের বীর সন্তানেরা

DEPARTMENT OF BOTANY


Gloriosa
EVOLUTION OF PLANTS
LEAF
STEM
VASCULAR TISSUE
FLOWER
Fun Facts


EVOLUTION OF PLANTS
LEAF
STEM
Pre Vedic

DEPARTMENT OF POLITICAL SCIENCE

দৃষ্টিকোণ

প্রথম পর্ব

চন্দননগর কলেজ
রাষ্ট্রবিজ্ঞান বিভাগ
২০২৩

সূচিপত্র

কৃতজ্ঞতা স্বীকার

'দৃষ্টিকোণ' নামক এই পত্রিকা প্রকাশে যাদের সাহায্য ও সহযোগিতা আমাদের বিশেষ ভাবে অনুপ্রাণিত করেছেন তাদের আমরা কৃতজ্ঞতা জানাচ্ছি। প্রথমত আমরা কৃতজ্ঞ চন্দরনগর কলেজের অধ্যক্ষ মহাশয়ের কাছে তথা রাষ্ট্রবিজ্ঞান বিভাগের - বিভাগীয় প্রধান ড আলোক দত্ত মহাশয়ের কাছে। এছাড়াও রাষ্ট্রবিজ্ঞান বিভাগের সকল অধ্যাপক -অধ্যাপিকাগণের কাছে বিশেষ ভাবে কৃতজ্ঞ যাদের সাহায্য ও সহযোগিতা ছাড়া এই পত্রিকা প্রকাশ সম্ভবপর হতো না। সর্বোপরি আমরা কৃতজ্ঞ বিভাগের ছাত্রছাত্রীদের কাছে যাদের অক্লান্ত পরিশ্রম এই পত্রিকাকে রূপায়ণে সাহায্য করেছে।

রাষ্ট্রবিজ্ঞান বিভাগ
চন্দননগর কলেজ

উদ্দেশ্য

চন্দননগর কলেজের রাষ্ট্রবিজ্ঞান বিভাগের পক্ষ থেকে 'দৃষ্টিকোণ' নামক এই পত্রিকা প্রকাশের প্রধান উদ্দেশ্য হল বিভিন্ন সমসাময়িক রাজনৈতিক বিষয় বস্তু সম্পর্কে নানা দৃষ্টিভঙ্গির আলোচনা পাঠককূলের কাছে তুলে ধরা। এখানে বিশ্ব তথা জাতীয় রাজনীতির নানান আনুষ্ঠানিক বিষয়ের উপর পূর্ণাঙ্গ তথ্যযুক্ত আলোচনা করা হয়েছে। এর মাধ্যমে যেমন ছাত্রছাত্রীদের লেখনশৈলী বিকাশ ঘটানো সম্ভব হচ্ছে তেমনই পাঠকবর্গের কাছে এক সুখ-পাঠ্য বিষয় উপস্থাপনা করা হয়েছে। এই পত্রিকার মাধ্যমে রাজনৈতিক বিষয়াবলীতে নানা দৃষ্টিভঙ্গিকে একজায়গায় আনা হয়েছে। নানা বিষয়কে আমরা সকলেই ভিন্ন দৃষ্টিকোণ থেকে বিচার করি তেমনই এই পত্রিকাতেও স্থান পেয়েছে ভিন্ন ভিন্ন দৃষ্টিকোণ। আশা করা যাচ্ছে বিভাগের অধ্যাপকগণ ও ছাত্রছাত্রীবৃন্দের এই প্রয়াস পাঠক বর্গের কাছে বিশেষ ভাবে সমাদৃত হবে এবং আগামীতে এমন কাজ চালিয়ে যেতে আমাদের অনুপ্রেরণা যোগাবে।

৩০জুন ২০২৩

রাষ্ট্রবিজ্ঞান বিভাগ
চন্দননগর কলেজ

সম্পাদক - ড. অর্ণব দাশগুপ্ত
সহসম্পাদক - সৃজিতা মজুমদার
ছাত্রপ্রতিনিধি - সৌম্যজিত সাঁতরা *(SEM IV)* অভিষেক সাহা *(SEM IV)*
পত্রিকা নির্মাণ - অভিষেক সাহা *(SEM IV)*

'মিহিদানার হাঁড়ি অথবা চিনেপটকা' : পশ্চিমবঙ্গের মানুষের মনে সংরক্ষণ ব্যাবস্থার রাজনীতি

আজকে যে বিষয় নিয়ে আলোচনা করবো , সেই বিষয় নিয়ে লিখতে গিয়ে কিশোরী বয়সে পড়া সুকুমার রায়ের পাগলা দাশুর এই গল্পটিই মনে পড়ে গেল। স্কুলে পাগলা দাশুর সাথে সহপাঠী রামপদের বেজায় খারাপ সম্পর্ক ,এহেন রামপদ তার জন্মদিন উপলক্ষে বিশাল এক হাঁড়ি মিহিদানা নিয়ে আসে,সবাই খেলেও গোমড়া মুখে এক কোনে বসেছিল দাশু। বন্ধুদের পিড়াপীড়িতে একমুঠো নিলেও,পরমুহূর্তে সেই মিহিদানা ছাগল-কে দিয়ে দেয় সে। পরবর্তী ক্লাসে পন্ডিত মশাই এর নিদ্রারসুযোগ নিয়ে ছাত্ররা যখন সবাই কাটাকুটি খেলায় মগ্ন তখন দাশু খালি হাঁড়িতে নিজে চিনেপটকা ভরে আগুন লাগিয়ে দেয়।যখন তাকে জিজ্ঞাসা করা হয়,সে এমন কান্ড কেন করলো,সে তখন বলে রামপদ তাকে মিহিদানা দিতে চাইছিলো না,তাই সে একাজ করেছে। দীর্ঘ দেড় হাজার বছর "তাঁদের" শোষণ করে, একশো বছর "তাঁদের" সুবিধা দিতেই "আমাদের" প্রাণ ওষ্ঠাগত, তাহলে হাঁড়িতে চিনেপটকাতো তারা একসময়ে রাখবেই। এই "তাঁরা" হলেন নিম্নবর্ণের মানুষ, আর 'আমরা' উচ্চবর্ণের উচ্চবর্গের মানববৃন্দ।

বর্তমান দেশে সংরক্ষণ প্রথা থাকা উচিত কিনা এই মর্মে আলোচনা করলে দেখা যায় ,অধিকাংশ পশ্চিমবঙ্গের মানুষই এই সংরক্ষণ ব্যাবস্থার বিরুধে। তাঁদের যুক্তি হলো ,যার উপর ভিত্তি করে এই সংরক্ষণ,অর্থাৎ 'জাতি -বর্ণ ',সেটির উপর সংরক্ষণ ব্যবস্থা চলতে থাকলে ,জাতিভেদ বাড়বে বই কমবেনা। কখন কখনো তাঁরা এই মন্তব্যও করেন ,তাঁরা যদি "নিচু জাতি"র(যাদের ব্রিটিশরা নাম দিয়েছিলেন SC,ST)মানুষ হয়ে জন্মাতেন তাহলে খুব ভালো হতো ,কারণ চাকরি পেতে খুব সুবিধা হতো। যদিও সরকারি চাকরির ক্ষেত্রে সংরক্ষনের আওতায় থাকা ৪০ শতাংশ -এর মধ্যে ২৩ শতাংশই পূর্ণ হয়েছে।বোম্বাই I.I.T.এর মতো জায়গায় ৩ মাসে ৩৪ জন দলিত ছাত্র আত্মহত্যা করেছেন। পাঞ্জাব - উত্তরপ্রদেশ

অঞ্চলে এখনো নিয়মিত উচ্চবর্ণের হিন্দুরা নিম্নবর্ণের-সংখ্যালঘুদের উপর অত্যাচার করে ,যার জলজ্যান্ত উদাহরণ আমরা হাথরস ঘটনায় পেয়েছি। আমরা দেখেছি কিভাবে ছত্তিশগড়, রাজস্থান , মহারাষ্ট্র -এ এখনো দলিত সম্প্রদায়ের জন্য পৃথক কুয়া , পুকুর রাখা হয়েছে ;একবিংশ শতকে এই ভারতে দাঁড়িয়ে এই রকম ঘটনা দেখবার পরেও কিভাবে আমরা বলতে পারি ,সংরক্ষণ ব্যবস্থার কোনো প্রয়োজন নেই।

ভারত তৃতীয় বিশ্বের দেশ। এখনো কোনো ব্যাবস্থার সাথে দুর্নীতি জড়িয়ে থাকবেই , মহাভারত-ও এই একই দুর্নীতির সাক্ষ আমাদের দেয়। কিন্তু তাই বলে সম্পূর্ণ সংরক্ষণ ব্যবস্থা-কে প্রশ্ন চিহ্নের মুখে ফেলা যায়না। আর উচ্চবর্ণের মানুষদের যদি সংরক্ষণ নিয়ে প্রশ্ন থাকে,তাহলে সমস্ত *Group D* এর কাজকে উচ্চবর্ণের কাজের আওতায় আনা হোক*!* না ,সেটি আমরা চাইনা, আমরা চাই ,সামাজিক মর্যাদা পূর্ণ সরকারি চাকরি যেন আমাদের আওতায় থাকে , সেটি যেন তাঁদের কাছে না যায়। এই অমানবিক মানসিকতা নিয়ে আমরা আজও পথ হাঁটছি ভবিষ্যতের দিকে। মনে রাখতে হবে ,আমাদের কাছে যেটি চায়ের দোকানের আড্ডার বিষয়বস্তু, পশ্চিমবঙ্গের বাইরে তা কিন্তু বর্তমানেও মানবিকতার বেঁচে থাকার সংগ্রাম*!*

RAKHI MONDAL
SEMISTER VI
POLITICAL SCIENCE(H)

সোশ্যাল মিডিয়া এবং যুব সমাজের প্রভাব

বর্তমান যুগে গণতন্ত্রকে সম্প্রসারিত ও সুরক্ষিত করেছে তথ্য-প্রযুক্তি। এই প্রক্রিয়ার অন্যতম প্রধান স্তম্ভ হলো সামাজিক মাধ্যম ও তার ব্যবহার। সামাজিক মাধমের ইতিবাচক ভূমিকার মধ্যেও এর নেতিবাচক দিকটিও মারাত্মক আকার ধারণ করেছে *WIKIPEDIA* তথ্য অনুযায়ী *2020* সালে বিশ্বে ইন্টারনেট ব্যাবহারকারী ২৪.৩% মানুষই এশিয়া মহাদেশের ভারত থেকে ইন্টারনেট ব্যবহার করে থাকেন। সোশ্যাল মিডিয়া যুব-সমাজের উপর নেতিবাচক প্রভাব ফেলেছে। সোশ্যাল মিডিয়া প্রতিনিয়ত বেড়ে চলার কারণে সামাজিক বৈষম্য সৃষ্টি হয়েছে।সামাজিক যোগাযোগ মাধ্যম ব্যাবহারকারীদের মধ্যে এক ধরণের আসক্তির তৈরী হয়েছে। সরকারের উচিত সোশ্যাল মাধ্যমকে গুরত্ব সহকারে পর্যবেক্ষণ করা। সাধারণ তথ্য বিনিময় করার ক্ষেত্রে সচেতনতা বৃদ্ধি করা, সংবাদ মাধমের দ্বারা সাধারণ জনসমাজের মধ্যে জনসচেতনতা বৃদ্ধি করার সরকারের অন্যতম দায়িত্ব.

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পাকিস্তান কি পরবর্তী শ্রীলঙ্কা

বিগত কিছু বছর ধরে শ্রীলঙ্কার আর্থিক ও রাজনৈতিক অবস্থা বেহাল হয়ে পড়েছে। শ্রীলঙ্কার এরূপ অবস্থার প্রধান কারণ হলো শ্রীলঙ্কা রাজনীতিতে একই পরিবারের সদস্যের অতিরিক্ত হস্তক্ষেপ। তাছাড়া চীনের মতো বিস্তারবাদী দেশে নিকট থেকে অতিপরিমানে ঋণ ধার নেওয়া ওই সমস্ত কারণের জন্য বিগত কিছু সময়ে শ্রীলঙ্কার মধ্যে বিশৃঙ্খলা ও গৃহযুদ্ধ দেখা দেয়।

একই রকম ভাবে পাকিস্তানের রাজনীতির কেন্দ্র হলো ভারত। ভারতকে কেন্দ্র করে পাকিস্তানে রাজনীতি করা হয়। ১৯৪৭ সালে ১৪ অগাস্ট পাকিস্তান স্বাধীন হলেও পাকিস্তানের সংবিধান ১৯৭৩ সালে তৈরী করা হয় ,তবে সাংবিধানিক পথে এগিয়ে যেতে এই দেশ ব্যার্থ হয়েছে। কালে কালে সরকারের সাথে সেনার দ্বন্দ্ব বেড়েছে। বর্তমানেও পাকিস্তানের বাহ্যিক ঋণ ক্রমে বেড়ে চলেছে। কোনো দেশ বা অর্থনৈতিক সংগঠন পাকিস্তানকে ধার দিতে রাজি নয়। দ্রুতবেগে পণ্যের দাম বেড়ে চলেছে। পাকিস্তানের ইতিহাসে আজ পর্যন্ত কোনো সরকার তার পূর্ণ মেয়াদ শেষ করতে পারেনি। পাকিস্তানে ওই রাজনৈতিক ও অর্থনৈতিক সংকটের ফলে পাকিস্তানে গৃহযুদ্ধের মতো পরিস্তিতি তৈরী হয়েছে। তৎকালীন আর্থিক সহযোগিতা না পেলে এই দেশ শ্রীলংকার মতো পরিস্থিতি হওয়ার সম্ভাবনা ঘনিয়ে আসছে।

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শ্রীলঙ্কার আর্থিক সংকট

শ্রীলঙ্কার একটি দক্ষিণ এশিয়ান দেশ যা ভারতের পশ্চিম এবং বাংলাদেশের তদ্দেশীয় সংলগ্ন। শ্রীলঙ্কার অর্থনৈতিক সংকট মূলত উদ্ভূত হয়েছে অপ্রতিশোধিত ঋণ পরিশোধ ও মধ্যপশ্চিম শ্রীলংকা যুদ্ধের পরিণামে। শ্রীলঙ্কা পরিষদের সাথে সমঝোতা স্বাক্ষর করেছে অনেকগুলো বিতর্কিত অনুবেদী দেশের মধ্যে যেমন: মার্কিন যুক্তরাষ্ট্র, চীন, জাপান ইত্যাদি। এই সমঝোতাগুলো মুলত শ্রীলঙ্কার অর্থনৈতিক উন্নয়নের জন্য প্রদান করা হয়।এছাড়াও শ্রীলঙ্কা প্রতি বছর মিলিয়নগুলি ডলার দিয়ে নগদ উত্পাদন করতে পারেনি এবং বিতর্কিত উপাদানের জন্য বিনিয়োগ সীমিত হয়েছে। অর্থনৈতিক সংকটের ফলে শ্রীলংকার মুদ্রার মান ক্ষয় পেয়েছে । শ্রীলঙ্কার অর্থনৈতিক সংকটের পেছনে কিছু মূল কারণ রয়েছে, যেমন শ্রীলঙ্কার রাজনৈতিক দ্বন্দ্ব এবং বাণিজ্য উন্নয়নে বিশেষভাবে সমস্যার সম্মুখীন হওয়া । শ্রীলঙ্কার একটি মুদ্রাস্ফীতি বিপজ্জনক দশার মুখোমুখি হয়েছে, যা দেশের অর্থনীতি এবং বাণিজ্য উন্নয়ন কে প্রভাবিত করে। এর কারণে দেশটি বর্তমানে টাকা উৎপাদন এবং বিতরণের সমস্যার সম্মুখীন হয়েছে। শ্রীলঙ্কার অর্থনৈতিক সংকটের অন্যতম কারণ হল দেশের বাণিজ্য উন্নয়নে সমস্যা এবং বিপণির বিপর্যয় সম্মুখীন হওয়া ।

শ্রীলংকার অর্থনৈতিক সংকটের পেছনের আরেকটি কারণ হল দেশের বাড়তি ক্রয়-বিক্রয় বা অবৈধ ক্রয়-বিক্রয় প্রথা। শ্রীলংকা বিষয়টি নিয়ে বর্তমানে অর্থনৈতিক সংকটে ভুগছে। বাংলাদেশের চেয়েও ছোট দেশ হিসাবে শ্রীলংকার এই সম্পর্কে আমাদের জানা অতিলঘু। তাছাড়াও বাংলাদেশের জন্য শ্রীলংকা একটি সম্পর্কযোগ্য দেশ/

- শ্রীলঙ্কা সরকারের মূল মাসুদ হাসান রাজাপসা সংশ্লিষ্ট কর্মসূচি পালন করতে অসমর্থ হয়েছেন।

- এই অর্থনৈতিক সংকটের মূল কারণ হলো দুইটি মুখ্য উদ্যেশ্যের সমস্যা উন্নতির অভাব এবং আর্থিক অস্থিতি /
- শ্রীলঙ্কা উন্নতি লক্ষ্য করেছিল তবে অব্যাহতির কারণে উন্নতি কার্যক্রমগুলি প্রতিষ্ঠিত হয়নি /
- শ্রীলংকার রাজনীতিতে অপসারণ, অদলবদল /

শ্রীলঙ্কায় টি টোয়েন্টি বিশ্বকাপ না হওয়ার কারণ

শ্রীলংকার বিশ্বকাপ না হওয়ার কারণ বিভিন্ন কারণের মধ্যে সংক্ষেপে অন্তর্ভুক্ত হতে পারে/ একটি সম্ভাব্য কারণ হতে পারে যে বিশ্বকাপ সংঘের মাধ্যমে বিশ্বব্যাপী মুকাবলা হয়, যা নির্দিষ্ট নিয়ম এবং শর্তাবলী মেনে চলে। আমি জানি এই সময়ের তথ্য ভিত্তিক নয়, কিন্তু শ্রীলংকার বিশ্বকাপ না হওয়ার সম্ভাব্য কারণ নিম্নরূপে সংক্ষেপে উল্লেখ করা যায়।

1. প্রশাসনিক সমস্যাঃ শ্রীলঙ্কার প্রশাসনিক সমস্যা সংক্রান্ত অপসারণ, দুর্ঘটনা বা অন্যান্য সমস্যার কারণে বিশ্বকাপে অংশনেওয়া হতে পারে। যেমনঃ পাকিস্তানের ২০১রশতাব্দীর বিশ্বকাপ না হওয়ার পথে কিছু প্রশাসনিক সমস্যা ছিল।

শ্রীলঙ্কার অর্থনৈতিক সংকটের পেছনে ভারতের সাহায্য প্রদান

শ্রীলঙ্কার অর্থনৈতিক সংকটের হাত থেকে মুক্তির জন্য ভারত বিভিন্ন পদক্ষেপ গ্রহণ করেছে। শ্রীলংকা ও ভারতের মধ্যে একটি বৈশিষ্ট্যমূলক সম্পর্ক আছে।

প্রথমত, ভারত শ্রীলঙ্কার প্রধান অর্থনৈতিক পার্টনার হিসাবে বিবেচিত হয়। একটি গবেষণামূলক প্রতিবেদন অনুযায়ী, ভারত শ্রীলঙ্কায় বৃদ্ধির জন্য প্রতিবছর বৃহত্তর পরিমাণের বিতরণগুলি করে থাকে। ভারত স্বতন্ত্র এলাকার জন্য একটি হিসাবে পরিচিত হয়, যেখানে শ্রীলঙ্কায় নিউজিল্যান্ড, চীন এবং মালদ্বীপের সাথে মিলিয়ে দিন সম্পাদন করে

উপকরণ এবং মালাবস্তু রাষ্ট্রগুলির জন্য ভারতীয় বাজারটি খুবিই গুরুত্বপূর্ণ।

শ্রীলঙ্কার অর্থনৈতিক সংকটের পিছনে ভারত শ্রীলঙ্কাকে প্রায়শই সহায়তা প্রদান করে। ভারত হল এলাকার পাশাপাশি একটি প্রধান অঞ্চলিক দেশ এবং দীর্ঘমেয়াদী সাদিক ও আর্থিক সম্পর্ক রয়েছে। এ সংকটের কারণগুলো বিভিন্ন হতাহত মৌসুমিক পরিবর্তন, অর্থনৈতিক সঙ্কট এবং মানবিক অস্থিতিশীলতার মধ্যে বিস্তারিত হতে পারে।

ভারত শ্রীলঙ্কাকে অর্থনৈতিক সহায়তা প্রদান করে এবং একাধিক উপায়ে সমর্থন প্রদান করে। নিলিখিত কিছু উদাহরণ উল্লেখযোগ্য :

1. ঋন প্রদান: ভারত শ্রীলঙ্কাকে অর্থিক ঋণ প্রদান করে যাতে তাদের অর্থনৈতিক সমস্যাগুলোর পরিষ্কারতা ও স্থায়িত্ব বৃদ্ধি করা যায়।
2. ভারত শ্রীলঙ্কাকে বাণিজ্যিক সহায়তা প্রদান করে।

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আগামী বিশ্বশক্তি হিসাবে ভারত

বর্তমান ভারতের ও সমস্ত বিশ্বের রাজনীতিবিদ,অর্থশক্তি ও নানান *Think Tank* -রা ভারতকে আগামী দিনের বিশ্বশক্তির নজরে দেখেছেন। ভারতে ১৯৪৭ সালে স্বাধীনতার পর থেকে নানান ধরণের আর্থ-সামাজিক পরিবর্তন লক্ষ করেছে।১৯৯১ সালে তৎকালীন অর্থশাস্ত্রী ডঃ মনমোহন সিং -এর মতানুযায়ী ভারত সরকার ,ভারতীয় বাজারকে বিশ্বের জন্য খুলে দেয় এবং দেশে নিশে করা আইনে জরুরি ফেরবদলের মাধ্যমে *Foreign Direct Investment (FDI)* ভারতে আসতে শুরুকরে এবং ভারত নানা দিক দিয়ে দৃঢ় হতে শুরু করে। কালক্রমে ভারত সরকার অর্থনীতিকে আরো সুদৃঢ় করতে নানান আইন ও নীতি আনে যার মধ্যে উল্লেখযোগ্য *'MAKE IN INDIA'* -এই নীতির দ্বারা ভারত সরকার খেলনা থেকে শুরু করে গাড়ি ,*Defence*-এর সামগ্রী ভারতে তৈরী করার পরিকল্পনা নেয়। তাছাড়া *2019* এ *COVID -19* -এর প্রভাব থেকে মানব জাতির কল্যাণ সাধনে বিশ্বের গরিব ও উন্নয়ণশীল দেশগুলিকে বিনা মূল্যে "টিকা" বিতরণের মাধ্যমে ভারতের *'Soft Power'* বেড়েছে। ভারত *(UNSC)*-তে স্থায়ী প্রতিনিধি ও *Veto Power* -এর জন্য নিজের সাথে সাথে অন্নুনত দেশ যেমন- আফ্রিকা ও ল্যাটিন আমেরিকার জন্যও দাবী জানায় যার মাধ্যমে *Global South* ভারতের দিকে আশাবাদী দৃষ্টিতে চেয়ে আছে। বর্তমানে *UKRAIN* ও *RUSSIA* এর যুদ্ধে *Neutral Stance* - রেখে ভারত বিশ্বের সামনে তার স্বাধীন বিদেশ নীতির প্রমান দিয়েছে। *USA* এবং *RUSSIA* - এই দুই দেশের সাথে ভালো সম্পর্ক রাখা বিশ্বের একমাত্র দেশ ভারতই। আজ ভারত *UNSC , G20* ও *SCO* -এর মতো শক্তিশালী সংগঠনকে অধ্যক্ষ হিসাবে পরিচালনা করে। সারা বিশ্বের সাস্থ ,শিক্ষা ,*Food Security, Climat Change* -এর মতো বিষয়ে বিশেষ ভাবে অংশ গ্রহণ করেছে।ওই সব কারণে ভারতকে আগামীর বিশ্বশক্তি হিসাবে দেখা হচ্ছে।

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ভারতে ধর্মনিরপেক্ষতার পরিভাষা - ধর্মীয় মেরুকরণ

খাতায় কলমে ভারত একটি ধর্মনিরপেক্ষ রাষ্ট্র অর্থাৎ ভারত রাষ্ট্রে কোনো পৃথক ধর্ম নেই। ধর্মনিরপেক্ষতার পরিভাষা অনুসারে ধর্মনিরপেক্ষতা হলো এমন এক অবস্থা যখন রাজনৈতিক সিদ্ধান্তগুলি কোনোরকম ধর্মীয় প্রভাব ছাড়া গৃহীত হবে। ১৯৭৬ সালে ৪২তম সংবিধান সংশোধনীর মাধ্যমে যখন 'ধর্মনিরপেক্ষ' শব্দটি ভারতের সংবিধানের প্রস্তাবনায় যুক্ত করা হয় তখন শাসন ব্যাবস্থায় ধর্মীয় প্রভাব কমানোর জন্য চেষ্টা করা হয়।

তবে ভারত কী আদৌ ধর্মনিরপেক্ষ হতে পেরেছে কারণ নানান সময় সরকারে নানান দল ক্ষমতায় থাকাকালীন সময়ে সরকারের একটি পৃথক ধর্মীয় চরিত্র তার সিদ্ধান্তে ও কার্যাবলীসমূহ দ্বারা প্রকাশ পেয়েছে। বিশেষত ভারতের মহান ধর্মনিরপেক্ষ চরিত্রটি ভোট রাজনীতির বলি হয়েছে। যার অতিসাম্প্রতিক উদাহরণ কর্ণাটক বিধানসভা নির্বাচনে একটি ধর্মীয় সংগঠনকে নিষিদ্ধ করা নিয়ে জনসমক্ষে এসেছে। বিভিন্ন রাজনৈতিক দলের বিশেষ বিশেষ ধর্মীয় অবস্থান এই সমস্যার সৃষ্টি করেছে। কখনো কোনো দল সংখ্যালঘু তোষণ করে সংখ্যালঘু ভোট নিজের দিকে আনার চেষ্টা করে। আবার কিছু দল দেশের সংখ্যাগুরু মানুষের ধর্মীয় আবেগ কে হাতিয়ার করে ভোট বিতরণী পার করতে চায়। কিছু কিছু দল এই কাজ প্রকাশ্যে করে এবং কিছু দল পরোক্ষ ভাবে নানা অছিলায় একথা সিদ্ধ করার চেষ্টা করে যে তারা এক বিশেষ সম্প্রদায়ের পক্ষে। যা তাদের নির্বাচনী প্রচারে মন্দির ,মসজিদ ,গির্জায় যাতায়াত ,নির্বাচনী ম্যানিফেস্টে ও বক্তব্যের বাহার শুনলেই বোঝা যায়।

এবং এর থেকেই সরকারী কাজকর্মে ধর্মীয় প্রভাব এর সূত্রপাত ,যে দল ক্ষমতায় আসে সে তার ধর্মীয় *Agenda* কে *Establish* করবার প্রচেষ্টায়

রত থাকে। এই ভাবে সরকারের নানা সিদ্ধান্ত ধর্মীয় তোষণের ছাপ থাকে স্পষ্ট।

তাই কবে এই বিভাজন ,তোষণের রাজনীতির অবসান হয় তার উপর নির্ভর করছে ভারতে ধর্মনিরপেক্ষতার ভবিষ্যত । যার উত্তর আমি নয় দেবে আগামী প্রজন্ম ও সময়।

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লিঙ্গবৈষম্য এবং ভারতীয় সংবিধান

ভারতে উদারনৈতিক গণতান্ত্রিক ব্যাবস্থায় এবং সমাজতান্ত্রিক ধাঁচে জনকল্যাণকামী রাষ্ট্র ব্যবস্থা প্রতিষ্টিত হয়েছে। ভারতে সংবিধান ও উদারনৈতিক গণতান্ত্রিক মতাদর্শের উপর ভিত্তি করে গড়ে উঠেছে। লিঙ্গ বৈষম্য বিষয়ক আলোচনা আজকের পৃথিবীর অন্যতম একটি আলোচ্য বিষয়। ভারতও তার ব্যাতিক্রম নয়। লিঙ্গবৈষম্যের বিষয়টি রাষ্ট্র ব্যাবস্থার প্রকৃতির মধ্যে নিহিত থাকে।

ভারতের উদারনৈতিক গণতান্ত্রিক আদর্শের ভিত্তিতে সংবিধান তৈরী ও কার্যকর হলেও ভারতীয় রাষ্ট্রব্যাবস্থায় এখনো পর্যন্ত সামন্ততন্ত্রের যথেষ্ট প্রাধান্য পরিলক্ষিত হয়। কিন্তু একথা অস্বীকার করা যায় না যে ভারতের নারী-পুরুষের সমানাধিকারের উপর জোড় দেওয়া হয়েছে। সংবিধানে তৃতীয় অধ্যায় মৌলিক অধিকার ,চতুর্থ অধ্যায় নির্দেশমুলক নীতি এবং অন্নান্ন অংশে - এর পরিচয় পাওয়া যায়। সংবিধানের ১৫নং ধারায় সামাজিক ক্ষেত্রে অন্নান্য বিষয়ে বৈষম্যের মতো লিঙ্গবৈষম্যকে অস্বীকার করা হয়েছে এবং নারীর বিশেষ মর্যাদার উপর জোর দেওয়া হয়েছে। ভারতীয় সংবিধানে ১৪-১৮ নং ধারার সাম্যের অধিকারকে স্বীকার করা হয়েছে নারী-পুরুষ নির্বিশেষে। সংবিধানের ১৬ নং ধারায় সরকারি চাকরি বা পদ প্রদানের ক্ষেত্রেও লিঙ্গবৈষম্যকে অস্বীকার করা হয়েছে। রাষ্ট্র পরিচালনার নির্দেশমূলক নীতিতে সামাজিক ও অর্থনৈতিক ক্ষেত্রে নারীর সমমর্যাদা এবং পুরুষের মতো পরিপূর্ণ নাগরিক মর্যাদা প্রদানের কথা বলা হয়েছে। সংবিধানের ২৩ ও ২৪ নং ধারায় দাসপ্রথা ,স্ত্রীলোককে দিয়ে নীতিবিগর্হিত কাজ করানো ,বিনা বেতনে কাজ করানো নিষিদ্ধ হয়েছে। অর্থনৈতিক কাজকর্মের জন্য ও অন্যকোনো উদ্দেশ্যসাধনের জন্য নারী ,শিশু প্রভৃতি কেনা ও বেঁচা নিষিদ্ধ হয়েছে।

শাসনতান্ত্রিক ও আইনী রক্ষাকবচ থাকা সত্ত্বেও এদেশে নারী-পুরুষের সমান সামাজিক ও অর্থনৈতিক মর্যাদা আজ অবদি পায়নি। এ অধিকার আদায়ের জন্য নারীজাতি সংগ্রামে সামিল হয়েছে। আর্থসামাজিক উন্নয়ন প্রক্রিয়াকে নারীকে ও পুরুষকে সমান অংশীদার হিসাবে গণ্য করা হয়না। গ্রামাঞ্চলে নারীজাতির এই হীনতা আরও প্রকট। গ্রামাঞ্চলে নারীর অস্তিত্ব ও আত্মমর্যাদা অনেকংশেই পুরুষের দোয়ার ওপর নির্ভরশীল।

ভারতে সংবিধানে নানারকম ভাবে লিঙ্গবৈষম্যকে নিষিদ্ধ করার পরেও দেখা যাচ্ছে ,বর্তমানে ভারতের রাষ্ট্রব্যাবস্থা ও শাসনতান্ত্রিক ব্যবস্থা লিঙ্গবৈষম্যের সবরকম সীমাবদ্ধতা থেকে সর্বপ্রকারে মুক্ত হতে পারেনি।

ভারতের সাবেকি সমাজব্যাবস্থায় তো বটেই ,বিদ্যমান সমাজ ব্যাবস্থায় ও স্বামী-সন্তান ও পরিবারের সকল পরিজনের জন্য নারীকে উদয়াস্ত হাড়ভাঙা খাটুনি খাটতে হয়। ভারতীয় সমাজবাবস্থায় নারীকে পরিবারের উপার্জনহীন সদস্য এবং এই কারণে পরজীবি সদস্য হিসাবে বিবেচনা করা হয়। ভারতের গ্রামাঞ্চলের সমাজবাবস্থায় নারীর স্বতন্ত্র পরিচয় ও মর্যাদা অস্বীকৃত। পতি ও পরিবারের পরিচয় ও মর্যাদাই হলো পত্নীর পরিচয় ও মর্যাদা ,স্ত্রীর পৃথক পরিচয় ও মর্যাদা নেই। গ্রামাঞ্চলে পারিবারিক সিদ্ধান্ত গ্রহণের ক্ষেত্রে পরিবারে নারী সদস্যের ভূমিকাকে গুরুত্ব দেওয়া হয়না। তবে এ বিষয়ে শহরাঞ্চলের পরিস্থিতি অনেকংশে পৃথক প্রকৃতির।

বর্তমানে বৈষম্যমূলক সমাজবাবস্থায় ,সমাজের ওপর পুরুষের দায়িত্ব কম ,গুরুত্ব বেশি ওপর দিকে বলা বাহুল্য নারীর উপর দায়িত্ব বেশি কিন্তু গুরুত্ব কম।

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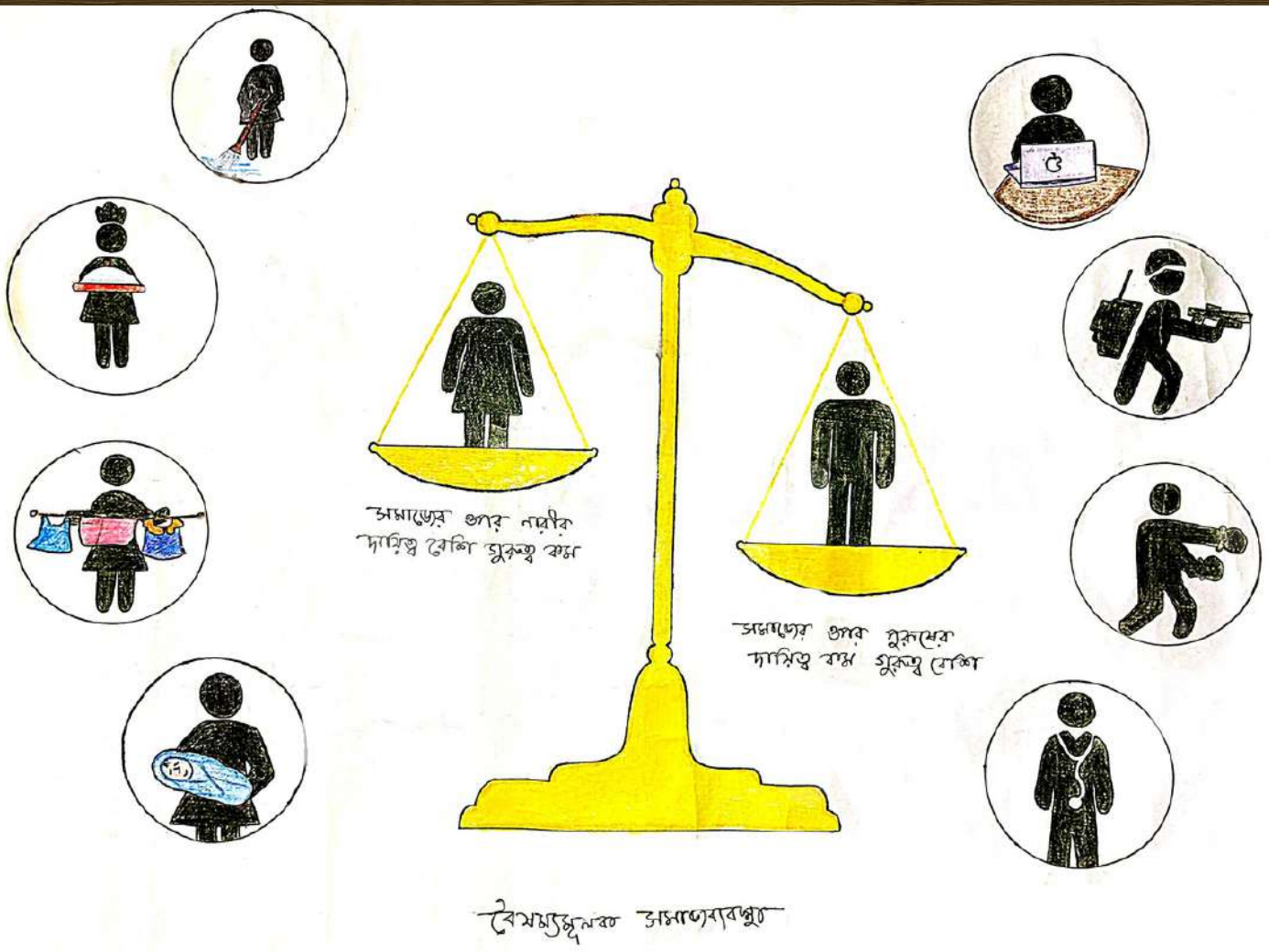

বৈষম্যমূলক সমাজব্যবস্থা

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