



Green Audit Report 2022-23

MILLAT COLLEGE DARBHANGA



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1. Internal Committee for Green Audit

Internal Chairman	Professor. Iftexhar Ahmad	Principal, Millat College	Professor
Internal Convener	Dr. Mustafa Kamal Ansari	HOD Dept Of Botany	Associate Professor
Internal Member	Dr. Siyaram	HOD, Dept of Chemistry	Associate Professor
Internal Member	Dr. Abdus Salam Jeelani	IQAC Coordinator	Assistant Professor
Internal Member	Dr. Md Jamshaid Alam	Controller of Examinations	Assistant Professor
Internal Member	Dr. Soni Sharma	HOD. Dept. of Philosophy	Assistant Professor
Internal Member	Dr. Tahfizur Rahman	Dept Of Zoology	Guest Faculty

2. Context and Concept

Green Audit is an important to measure the contribution of an institute towards its sustainability. It is associated with the practices that make impact upon the environment in the long run. Thus Green audit, though is very close to environmental audit, also include the concept of three 'R's "Reduce Reuse and Recycle".

As per the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989). The ICC defines Environmental Auditing as: "A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing with the aim of safeguarding the environment and natural resources in its operations/projects."

3. Introduction

In 1969, Congress recognized the importance of the issue and passed the National Environmental Policy Act (NEPA). In 1980s Environment Protection Agency (EPA) was formed to protect human health and environment. With time while protecting environment through EPA which focused mainly to clean up the pollutants/toxins a parallel process started to reduce the use of toxic substances and reuse the products which are made from environmental resources. Thereby in one hand the objective became to stop using materials or stop adopting processes those were causing pollution and start an alternate path that used

environment friendly materials or did not create a non-biodegradable waste and that used less energy or carbon foot print. Subsequently, for any organization or institute it became important that it adopts processes that do not individually or collectively make a negative impact upon the environment and help in maintaining "the green concept" and contributing as much as it can. Thus, an audit becomes indispensable to understand where an institute or organization needs to improve in earning green points. With the inception of the subjects like Environmental Sciences and Green Chemistry that target to teach sustainability for every responsible institution or organization Green Audit has now become an integral part of management process. A Green Audit is thus a method of gathering data about an organization that offers a realistic evaluation of the actions the organization takes to safeguard the environment. Well-developed environmental objectives and targets should be implemented in order to limit the negative consequences to a greater extent in order to preserve the environmentally friendly atmosphere of an organization. It can spread Environmental awareness, ethical standards, and a sense of environmental responsibility. It helps employees and students understand the effects of going green on campus.

4. Overview of the Institute

Millat College, recognised by UGC under 2fand 12B was established in November 1957. And constitute Lalit Narayan Mithila University. The College has around 5 acre build area 2.2 area of land and is a co-educational institution. The college has been accredited at the B level by the executive committee of NAAC (National Assessment and Accreditation Council) on 14 February 2014. The Institution endeavours to facilitate opportunities for educational empowerment and capacity building through promotion of quality education and promote moral, social and human values to become catalyst of social transformation and justice. The College was established with a mission of spreading higher education among the under privileged class and rural community. The college provides undergraduate programme. The B.A programme covers Honours in English, Persian, Maithili, Urdu, Hindi, History, Economics Psychology, Geography, Sociology Philosophy, Political Science, B.sc Program covers Honours in Chemistry, Physics, Botany, Mathematics, and Zoology. B.Com Honours is offered for Commerce Students. In Account and Marketing Management. These subjects enable students for competitive examinations and nurture the cultural heritage as well. The college follows a transparent online system of admission on the basis of merit.

The College has some extension activities of Community Development, Health and Hygiene Awareness, Adult education and awareness, AIDS awareness, etc. through NCC and NSS wings of the College. Students from the ST, SC & OBC communities are given State Govt. stipends. The College promotes Cultural activities amongst students. And holds Counselling sessions. The library has been computerized and is well equipped. NCC unit has done commendable performance. The college has Career Counselling Cell, Anti-Ragging Squad and Women Harassment Redressal Cell. College Development and Building Committee, Academics Monitoring Committee, Attestation Cell, Admission Committee, Research & development committee, Career Counselling and Guidance Cell, Grievance Redressal

Committee, Science Information & technology committee, UGC/RUSA Finance Committee, Examination Committee, E-Resources (SWAYAM,MOOCS,INFLIBNET/N-LIST etc.) Promotion Cell, Campus maintenance and Discipline Committee, College Magazine Committee, Library Automation and Maintenance Committee, Book Purchase Committee, Student Support & Placement Committee, sport Games Committee, Literary and Cultural Activities Committee, Internal Complaint Women's Committee, Anti-Ragging Committee, College RTI cell, Community and Social Services Committee, Press and Electronic Media Committee, Seminar, Conference/Workshop Committee, Staff Room In charge, Boy's Common Room In charge, Girl's Common Room In charge, Health's and Hygiene Cell, Website Committee, Counselling Committee, S.T., S.C. & O.B.C. Cell, Routine formation Cell.

5. Aims and Objective of the Institute

The Institution endeavours to facilitate opportunities for educational empowerment and capacity building through promotion of quality education and promote moral, social and human values to become catalyst of social transformation and justice.

1. To promote academic excellence.
2. To include a civic sense with ethical, moral and social values in students and help them to grow into good citizen.
3. To empower students to lead productive lives and become agents of social economic change of the community.
4. To provide education among students of lower economic strata.
5. To provide quality and value based higher education irrespective of caste and community.
6. To provide the supports for the excellence in sports and cultural activities.
7. To make the campus eco-friendly and also to make the community aware of preservation of natural resources.
8. To provide community service through an active NSS unit.
9. To make the campus ragging free.
10. To provide oxygen and reduce pollution through plantation drives inside and outside the campus
 - To adopt sustainable practices and inculcate the same among the students
11. In everyday activities to focus on three R factors: Reduce, Reuse and Recycle
 - To go more on waste management and cater the society an eco-friendly campus

6. Infrastructure of the Institute

Classrooms: Our College has Classrooms and special dedicated spaces/rooms like the PLT rooms (Physics Department) equipment like projection facilities in the classrooms and smart classroom. Regular maintenance of computer equipment is done by concerned teachers, lab-assistants and lab attendants.

Laboratory: The College has several laboratory facilities for lab-based subjects such as Physics, Chemistry, Botany, Zoology etc. The laboratory is managed by the respective Laboratory Attendant under the supervision of the Head of the Departments the Library:

The Library is adequately equipped with text and reference books. All library information about books is available. Library resources are automated with though partial automation is done, efforts for full-automation are in progress. Library is equipped with the cameras for overall monitoring and surveillance. All the Staff Members can access the library facilities and can borrow books, Magazines, periodicals, inclined facility and other materials as per the rules for each category. Annual physical verification of Stock is conducted through Library audit.

IT Infrastructure: The College is gradually moving towards complete online facilities in governance such as Admission, Accounts, and Fee Collection etc. During the pandemic entire teaching-learning and internal assessment has been done online. Classes were held online with the help of Google Meet and Google Classroom.

The institute provides sports facilities for students. Indoor games including table tennis, carom, chess is available on campus. Outdoor games like football, volleyball, kabaddi, badminton, and other athletic sports like shot put, javelin, high jump, long jump, running race are regularly conducted throughout the year. The maintenance of sports ground and equipment at the college is carried out by Sports-in- Charge and the Sports Committee. Regular inspection is done by sports-in-charge to check the ground/sports related equipment and take appropriate measures.

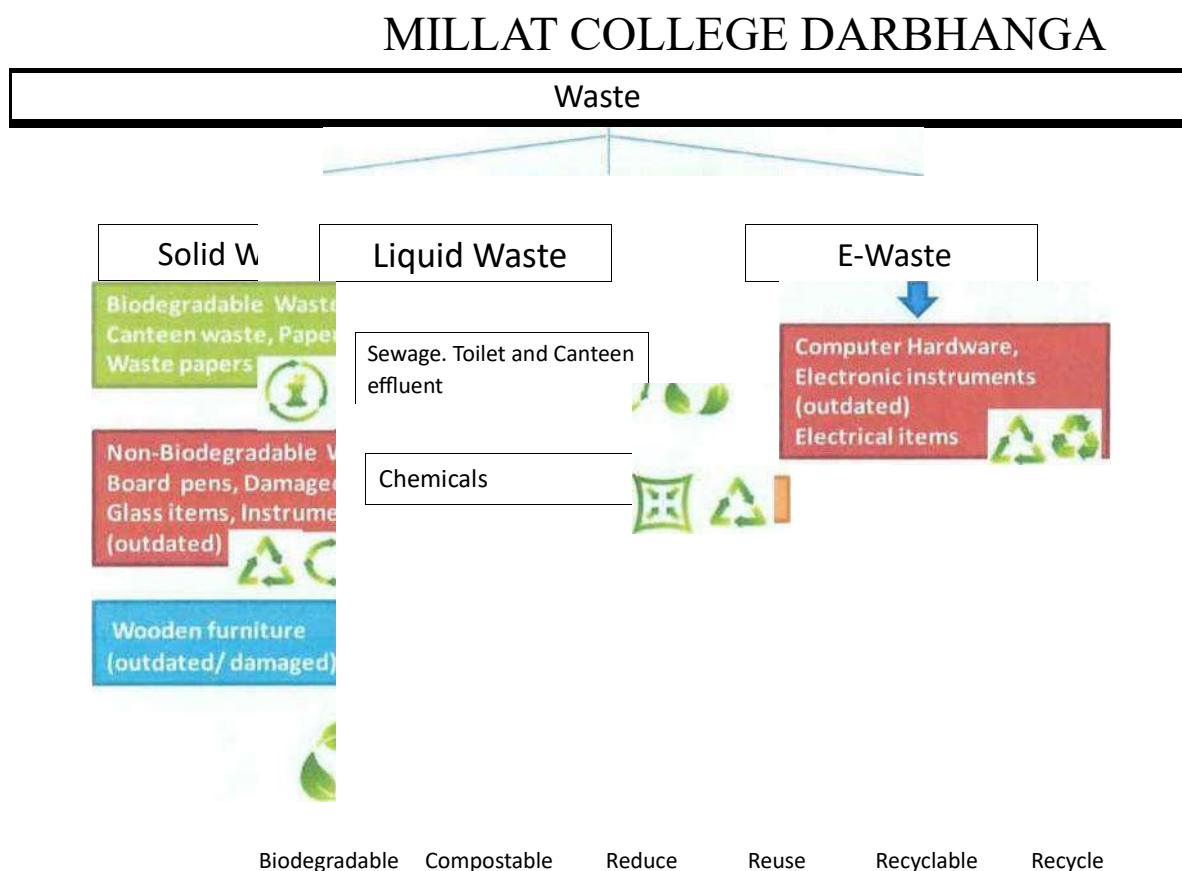
The computers in the institute are high performance advanced printers. The entire campus is under CCTV surveillance which includes cameras of both and type.

The college caters to the educational needs of the large number of students hailing from Tea Garden and Rural areas. The infrastructure facilities such as classrooms, laboratories, library, and common room facilities for both boys and girls are separately provided. The college has a systematic mechanism of maintenance and upgrade of physical, academic, and sport facilities. The departmental Heads place academic requirements like books and journals, IT facilities, organizing special lectures, seminars or workshops demands along with the approximate budgets to the principal. The principal places the requisition in the meetings of the Governing Body, Finance Committee, Library Committee, or any other relevant committee. Financial rules of the government are strictly followed for all purchases. The conditions of the classrooms and the furniture provided for the student in the classrooms are

regularly monitored. The office maintains a register for complaints, repair etc. of all facilities like furniture, electrical work, generator, building infrastructure etc. Repair work is done according to the rules. The campus is protected under CCTV surveillance. Water purification machines, the CCTV are routinely maintained under Annual Maintenance Contracts. Sports amenities are maintained by the sport staff.

7. Green Parameters

7.1. Waste Management



Solid waste: We are trying to work with minimum papers, mostly working with soft copies and PDF. The waste papers, however, are used for rough works for poor they used as fuel in hand made oven (Chulha) to make daily refreshment. The rest of the non-biodegradable wastes like board markers and ink bottles are packed and put into non-biodegradable waste bins. The wooden damaged/ old outdated items are recycled by reconstructing into different models and at the most when nothing can be done, in case of broken wooden materials, those are used as fuels to cook during social / cultural gathering when lunch is arranged (could not be possible much during pandemic).

Solid canteen waste (mainly food stuffs) is decomposed and the compost is used for gardening inside the campus.

Department of Physics and Chemistry have both identified some instruments which unfortunately are of no use due to the change in the syllabus. The Departments are planning to use these instruments in experiments which may be a part of "hand on training" for the students in project works which are related to present syllabus and enhance the knowledge and skills of the students.

Liquid waste: We don't have a management system to deal with liquid waste inside our college especially the chemicals. However, the Department of Chemistry always encourages students and the teachers to follow the guidelines designed by the Department itself:

- The College Prefers to work in micro scale and thereby avoiding excess chemicals and reagents.

Avoiding the experiments dealing with highly toxic and carcinogenic chemicals.

In preparations and synthesis wherever the use of organic solvents is unavoidable, the solvents used are relatively nontoxic and it is distilled to recycle and reuse.

E-waste: The institute runs with for the computers and accessories. There is a provision of buy back in cases. However, the items which do not fall under these categories, are dismantled from parts to parts and analysed. The working fraction is identified and if possible reused.

The College Staff, takes care of batteries by recharging, and repairing wherever possible. Many of the existing old ceiling fans have been renovated to high-speed fans and been reused. The institute believes in using the existing rather the buying until absolutely required and maintaining "Reduce-Reuse- Recycle" strategy wherever possible.

7.2. Greening the campus by Plantation

Ornamental Plants

S.no.	Citify Name	Family	Common name
1	Mehndi	Lawsonia Lnemis	Lythraceous
2	Carnation	Dianthus Caryophyllids	Caryophyllaceae
3	Rose	Rosa Rubiginous	Rosaceae
4	Jasmine	Jasminum	Oleaceae
5	Arhul	Hibiscus rosa	Malvasia
6	Dypsis Latescent	Chrysalid Carpus	Are Caceae

Shade and Fruit Trees

S.no.	Scientific Name	Family	Common name
1	Jamun	Syzygium Cumin	Myrtaceae
2	Mango	Mangifera indies	Anacardiaceae
3	Shisham	Dalbergia sessoo	Fabaceae
4	Ashoka	Saraea asoca	Fabaceae
5	Bel	Aegle Marmelseorrea	Rosaceae
6	Semal (Silk Cotton)	Bobax Ceiba	Bombacaceae
7	Neem	Azad Rachta	Meliaceous
8	Guava	Myrtaceae	Psidium guajava

Medicinal Plants

S.no.	Scientific Name	Family	Common name	Total
1	Aloe vera	Liliaceae	Aloe vera	7-9 clusters
2	Mint	Mentha	Rosaceae	5
3	Tulsi	Acimum Lenuifforum	Lamaceae	5
4	Neem	Azadirachta Indica	Mehaceous	
5	Leman	Litrus Leman	Rutaceae	
6	Arjun	Terminalia Arjuna	Combretaceae	2

7.3. Energy Conservation

Green Audit Details of Light Confection (Total No.)

S. R. No	Name Place	Tube Light	LED	Celling Fan	CCTV Camera with Monitor	Stand Fan	AC	Aqua guard	Exhaust	Refrigerator
1	Principle office & Associate office		06	03	02		01			01
2	Lab									
3	Conference Hall	29	16	31	03					
4	Admission Counter		15	05	01	03				
5	Toilet		25							
6	Department		60	50		08				
7	General Section	03	05		02	05	02			
8	Corridor / Varandah									
9	Staff Room	01	04	04			01	01		
10	Account Section	04	01	04	02	01		01	01	
11	Examination Dept.	03	09	06	01	01				
12	IQAC		03	02			01	01		
13	Class Room		65	86			01	01		
14	Library	03	17	14	02					
15	Reading Hall		28	12	01					
16	Campus	10	10						Headlight - 6	
17	Physics Lab		10	09		01				
18	Chemistry Lab		27	03		02		01		
19	Botany Lab		01	06		01	02	01		
20	Psychology Lab		05	06		02				
21	Zoology Lab		10	09	01		01	01		
22	Home Science									
23	Printer									
24	Photocopy Machine									
25	Common Room Girl		4	3						

Total Energy Consumption per Month –an average 1782 unit using etc.

Energy Saved from solar energy LED etc.:- yes we are saving energy by using of the following appliances and method.

1. Switch off light and electrical appliances when not using them
2. Switch to energy-saving LED light globes.
3. Manage the heating and cooling...

7.4. Water conservation

Usage: The institute uses water mainly for Drinking, Cooking (in canteen), in laboratories (Chemistry mainly and Physics), Toilet purpose and in Gardening. Nearly 15000 liters of water are used of which a major fraction of drinking water is supplied by Government which is further purified with UV/ RO treatment and served to the students and the staff members.

Recycling and utilization of rain water: The harvesting spaces have been settled one beside Botany Department and another beside Chemistry Department. These two would meet the demand of water in the laboratories and washrooms of the new building. The capacity and the expected output would be 6000 L.

However, the harvesting of rain water in smaller scale have been in practice in Chemistry Department. During rainy season 250 L tanks are used to collect rain water coming from tin shed and subsequently used in canteen for washing and cleaning. Likewise stored rain water is utilized in gardening whenever possible. Any types of misuse of water are prevented and it is made sure that there is no water loss through faulty pipeline.

Rain water Harvesting Plant

A massive Rain water harvesting process by Millat College store rain water and provide approx. $3000\text{ L} \times 2 = 6000\text{ L}$.

7.5. Air Quality

The Campus are spacious and airy with sufficient natural day light. The campus provides a good amount of oxygen to its nearby habitat and acts as a screen for carbon dioxide which tries to come from nearby vehicles of highway. All the vehicles used by the faculties are and hence most energy efficient and least polluting. Uses of electric vehicles and bicycles are encouraged. The campus has got of green zone which is occupied by lush green outfield and plantation. The construction

Buildings including the administrative block, library, academic buildings and canteen cover Top view of the college is shown in the Fig (Satellite view from Google map).

The following table gives the quantitative details

Sly No	questionnaires	Answer Number
1	Well-ventilated/ aerated rooms	Yes,
2	Room facing / ventilation faces away from the nearest busy road	Yes,
3	Window : Floor ratio	
4	Doors facing windows aiding cross aeration	Yes,
5	Air Conditioners installed	Yes, Number
6	Institute owned vehicle (Bus, Van, Cars)	No
7	Faculty owned vehicle	Yes
	4-wheeler (cars)	Yes, 11
	2-wheeler (scooters and bikes)	Yes, 20
8	Number of AC vehicles	Yes, 11
9	Vehicle Fuel type (Diesel / Petrol)	Petrol, 1 1
10	Are vehicles with Pollution free certificate?	Yes
11	Number of Electric Vehicles	Nil
12	Air Quality Monitoring Program (if any)	Not so far
13	Students suffer from respiratory problems inside campus	No
14	Air purifying Trees (high density leaves with large surface area to absorb Carbon dioxide and dust)	Yes,

Oxygen production by the campus

Google says "A tree of 100 ft. tall and 1 8-inch diameter produces 6000 pounds of oxygen annually" which is = 2724 kg per year. The campus has trees of average height 40 ft. (30-50 ft.) and average diameter 20 inch (10-30 inch). Hence the campus produces $(2724 \times 20 \times 40) / (100 \times 18)$ 1362 kg of Oxygen per tree per year.

Therefore the campus produces a massive of Oxygen by the trees. The shrubs and plants add more to it.

Thus the campus acts as a massive air purifier for the locality.

7.6.

Animal Welfare

	Biological classes	Animals excise found	Habitat
01	Vertebrates (Avis)	Birds	Trees
02		Crow	
03		Sharrow	
04		Maina	
05			
06		Wood ecker	
07		Parrot	
08	Vertebrates' mammals	Monkeys (Occasional)	
09	Vertebrates (mammals)	Rats	Nearby canteen
10			Open field
11		Cow	
12		Goat	
13	Vertebrates am habitants	Frogs (Toad)	Underground holes
14	Vertebrates (reptiles)	Snakes poisonous	Not seen
15		Rat snakes non poisonous	Under round holes
16		Chameleon	Trees
17	Invertebrates (Insects)	Honey bees	Tree/ building unshed
18		Grass hopper	Grass field
19		Ants	Field
20		Cockroaches	Store rooms
21		Beetle	Tree leaves and grass cover
22	Invertebrates Annelida	Earth worm	Open round field
23		Centimides	Tree base
24	Invertebrates Mollusca	Snails	Plants/ Bushes/ Trees

7.7.

Environmental legislative compliance

Sly No	questionnaires	Answer
01	Awareness of Environmental Laws and maintaining different aspects of environmental management	Yes
02	Rules imposed inside the campus to protect the ecosystem and environment	I.NO Tobacco zone 1. Use of disposable polythene bags/ throwing chips pouches inside campus is prohibited 2. Plantation drive is done routinely by NSS and NCC 3. Least use of paper and most of the official documents are shared in PDF through electronic /social media
03	Hazardous waste generation	The campus has low possibility of hazardous waste generation. Chemistry Department is keen to prevent hazardous toxic chemicals going as waste. For this, the Department restricts the use of mercury and lead compounds and the experiments associated with these. It uses mostly the green solvents and avoid carcinogenic or chlorinated solvents during experiments. Strong acids and bases are converted into harmless salts by using base and acid sink.
04	Air quality monitoring	Not yet done due to lack of device
05	Waste water quality monitoring	Yes. The pH of the laboratory effluent routinely checked by the department of Chemistry.
06	Drinking water quality check	TDS and pH are routinely checked by the Department of Chemistry.
07	Biomedical waste	Biomedical wastes are generated by the blood donation camps; vaccination camps organized by NSS. These wastes are disposed of by the professionals of the medical team.
06	Stack monitoring of DG	Done by the supplier
08	Fire extinguishers	Routinely charged and maintained

7.8.

General practices

	questionnaires	Answer
01	Students and the Faculties are made aware of environment protection act and laws	Yes
02	Implementation of Acts to protect the environment	Yes a)The environment laws followed by the institute are: b)Environment Protection Act 1986 c) The Water Act 1981 d)The Constitution Act of 1976 (GOI)
03	Energy minimization	Yes Dedicated staff members to monitor the misuse of electricity and report. Installation of Solar lights for campus lighting. Renovation of old ceiling fans to upgraded high speed energy efficient fans. Replacement of primitive mercury vapour discharge tube lights with low watt e rein LED tube li hrs.
04	Active engagement of student and Faculties to protect the greenery	Yes 1. Destroying a plant is prohibited. 2. Both engage in plantation. 3. Plant saplings are gifted to resource persons or guests. 4. Proper use of waste bins for biodegradable and non-biodegradable items are done. 5. Toxic chemicals are not used and disposal of acids and bases are prevented without salting. 6. Misuse of water is strictly prohibited and monitored.

Sly No	questionnaires	Answer
05	Celebration of World Environment Day, Earth Day, and Ozone Day	Yes NSS team is actively engaged 1. World Environment Day is observed on 5th June. 2. Earth Day is observed on 22nd April. 3. World Toilet Day is observed on 19th November 4. World Water Day is observed on 22nd March 5. National Youth Day is observed on 12th Jan
06	Recognition/ Certification of Environment Friendliness of the Cam us	Yes By the University of Lalit Narayan Mithila University.
07	Any Renewable Energy Sources inside the campus	Yes Solar energy assisted high focusing I hit to light the cam us.
08	Does the Institute conduct green audit or Ener audit of its cam us?	Yes.
09	NABL, NABET, T PM accreditation	No
10	NAAC accreditation	Yes , at 2014 2 nd cycle under recess


8. Recommendation of the Team

1. A medicinal plant should be created with all plants of medicinal importance
 - Plant ownership programs should be introduced in the institute
 - Biodiversity Club has to establish to ensure proper permission of student in keeping the campus green.
 - Water usages meter have to install to monitor water usages and wastages.
2. A regular air quality monitoring program needed to keep track of everyday air quality.
3. Increase in Environmental promotional activities for spreading awareness at campus.
 - Star rated ceiling fans to be installed
 - Rooftop solar panels to be installed to cover more electrical energy usage
 - Roof top trusting shed to be done to harvest more rain water

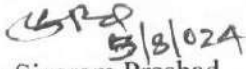
Internal Committee Members

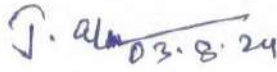


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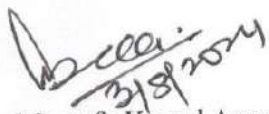

3.8.24
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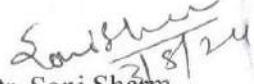

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