

## Green Audit Report for 2020-2021

# P N DAS COLLEGE

Affiliated to West Bengal State University (Accredited by NAAC Grade-B)

Santinagar, Palta, Kolkata-743122



GLOBAL EHS CONSULTANT, KOLKATA

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31.08.2021

We would like to express a deep sense of gratitude to the authorities of PN Das College, Santinagar, Palta, Kolkata-743122 West Bengal for giving us opportunity to carry out the Green Audit of the college campus. We also acknowledge with much appreciation the crucial role of faculty members and Principal of this college during the preparation of audit report.

The green audit aims to analyse environmental practices within PN Das College, West Bengal campuses which will have an impact on the eco-friendly atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of university environment. It was initiated with the motive of inspecting the effort within the institutions whose exercises can cause threat to the health of inhabitants and the environment. Through the green audit, a direction as how to improve the structure of environment and there are include several factors that have determined the growth of carried out the green audit.

PN Das College, West Bengal has assigned Global EHS Consultant, Kolkata to conduct green audit as per the Criteria 7 of NAAC.

Global EHS Consultant (GEHSC), Kolkata is the foremost provider of country-specific and industry- academic specific EHS (environment, health, and safety) regulatory analysis. GEHSC, Kolkata is a research and advisory firm with country experts and partners over outside India. GEHSC, Kolkata has delivered critical business and regulatory intelligence to corporate managers and decision-makers around India.

Dr. Susanta Podder (Grad IOSH, PhD, M. Tech, Lead Auditor of ISO 14001, ISO 45001, ISO 9001) Chief advisor of Global EHS Consultant, Kolkata and Adjunct associate Professor, Lincoln University College, Malaysia visited PN DAS College campus on 7<sup>th</sup> August 2021 and carried out the assessment.

The aim of the Green Audit is to survey the existing environmental practices and to assess the significance of the features found to facilitate the development of Environment Action Plan (EAP) with clear, long-term objectives and the program for implementation.

The overall environment of the college campus is being safe guarded with various activities. The utilization of the renewable resources is being observed through less energy consumption through LED Bulbs, water saving initiatives, green coverage across the college campus.

Waste Management is also effectively managed through safe disposal systems of wet and dry waste. Especially recycling of e-waste, plastic waste, and safe disposal of sanitary napkins etc. Apart from the implementation of the above, the college management has also been very keen on involving students continuously in creating awareness through several activities.

*For Global EHS Consultant, Kolkata*

  
(Dr. Susanta Podder)



## ACKNOWLEDGEMENT

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The aim of the Green Audit is to survey the existing environmental practices and to assess the significance of the features found to facilitate the development of Environment Action Plan (EAP) with clear, long-term objectives and the program for implementation.

The overall environment of the college campus is being safe guarded with various activities. The utilization of the renewable resources is being observed through rainwater harvesting unit, reuse of wastewater and green coverage across the college campus.

Waste Management is also effectively managed through safe disposal systems of wet and dry waste. Apart from the implementation of the above, the college management has also been very keen on involving students continuously in creating awareness through several activities.

For Global EHS Consultant, Kolkata

  
(Dr. Susanta Podder)

## ● Introduction

### 1.General

Name : **P N Das College**

Address : **Santinagar, Palta, P.O.-Bengal Enamel, Dist.-North 24 Pgs,Pin-743122,West Bengal**

Mail Id : [pndc.principal11@gmail.com](mailto:pndc.principal11@gmail.com)

Website : <https://www.pndacollege.in/>

Phone Number : **+033 2592 1327**

Latitude and Longitude : **22°47'2.06"N & 88°22'46.39"E**

Available area of the facility : **4.285 acres**

#### **Population:**

Teaching and non-teaching staff : **53**

Students : **894(Female more than 50-55%)**

#### **Facilities**

a. Total built-up area around **17340.75** square meters.

b. Numerous classrooms (**20**) and office rooms (**4**) are available for variety of the classes.

c. Adequate number of sanitary facilities (**13**) separate for male candidates and female candidates, staff members (**1**), students (**4**) are available.

d. Number of office rooms (**4**), study rooms (**20**) prevail in the college building.

e. **Two** library buildings are available with a collection of lot of books and magazines.

f. **One** tube well (**6--650 ft**) and **3** wells with submerged pump is available in the campus to cope up with water shortage in the campus.

g. **Three** water cooler of **250L** each and **6** water purifiers are available inside college premise.

h. Total green canopy cover approximately **3000** square meters around the college campus.



i. **Four** solar street lights of **48 kwh** are available in the campus.



j. **1000 L** capacity storage of Rainwater harvesting system are available in the campus.



k. **One** smoke detector is available in the auditorium building of the college campus.

l. **One** medical unit and **one** skill development center is available.

m. **One** fire-alarm system is also present in the college campus.

n. The college campus is made **plastic free zone** by educating all members not to carry a single plastic inside college.

## 2.Environmental Policy

P N Das College, Santinagar, Palta, P.O.-Bengal Enamel, Dist-North 24 Pgs, Pin-743122, West Bengal shows its sensitivity towards the environment by establishing its environmental policy.

### The Aims of the Policy

The policy aims to eliminate or reduce all forms of environmental pollution and encourages all faculty members, staff, students and other stakeholders to do the same. The college always raises awareness of environmental issues among its staffs, students or stakeholders, especially plastic pollution and encourages initiatives leading towards a clean environment. Its academic departments, NSS unit, Women Cell works towards this aim collectively.

The policy promotes the 3 R's for waste in the following order: Reduce, Reuse and Recycle and provide convenient waste collection points and guidance for the disposal of -----

- a. Paper
- b. Cardboard
- c. Glass
- d. Plastic
- e. Electrical items and white goods
- f. Hazardous waste
- g. E-waste.

The college aims to minimize the consumption of water and electricity and mainly solid waste disposal and thereby contribute to the proper use of the natural resource by the following ways:

- a. Encourage to report leaks and rectifying them promptly.
- b. Progressively replacing/supplementing water-taps in staff-room, washroom etc. if needed.
- c. Exploring options for using waste water wherever possible.
- d. Establishing rainwater harvesting schemes in science buildings of the campus.
- e. Progressive replacement of light bulbs with energy efficient ones.
- f. Encouraging staff, mainly students to turn off electrical appliances when not in use.
- g. Minimizes the consumption of electricity where opportunities arise.
- h. Conserving energy by promoting the use of daylight.
- i. Conducting frequent preventive and corrective maintenance.

### 3. Steps Taken and Mechanism

- a. The college adapts health, safety, and an environment based codes of practice and relevant guidance and complies with legislation.
- b. The college has planned for Solar panel systems on the campus.
- c. The college campus is completely free from smoke, plastic bags and cups.
- d. Waste bins are placed at appropriate locations to maintain a clean and tidy campus.
- e. Green initiatives are taken by developing medicinal plantation through adequate plantation by the college (NSS Unit and the maintenance cell).
- f. The arrangement to set off the fire causing environmental damage by setting the fire extinguishers at different places on the premises.

#### **4. Environmental Management Program:**

Annually Rs. 138615/- budget is allocated towards environmental protection and pollution prevention activities and for the last 2 years, Rs 97105/- budget has been put up. This includes plantation, monitoring expenses, treatment recurring costs etc. In addition to this, whenever there is any specific project or capital expenditure required for environmental protection, the institute provides it as per the need.

#### **5. Audit Scope**

The audit is carried out for the activities at P N Das College, Santinagar, Palta, P.O.-Bengal Enamel, Dist-North 24 Pgs, Pin-743122, West Bengal.

#### **6. Audit Criteria**

- a. Applicable guidelines of NAAC
- b. Applicable Environmental Legislation
- c. Best environmental practices

#### **7. Audit Objective**

In line with the audit definition, the objective of the audit is to have systematic, periodic, planned evaluation against objective evidences and reporting the results to the management as per the focus of the audit. Green Audit focuses on the basis of the environmental sustainability in terms of applicable environmental elements like Air, Water, Land, Flora, Fauna, Natural resources and Human being. The very objective of this audit is to evaluate the institutes green performance based on the focus indicators as stated above in view of the goal towards environmental sustainability, applicable legislation, environmental policies and standards. The green audit objectives can be stated as follows.

- a. To review the knowledge and awareness concerns of the institute for the journey of sustainability.
- b. To review the efforts made to protect the environment by preventing pollution and conserving the natural resources being used in the campus.
- c. To establish a baseline data to assess future sustainability and avoid heavy environmental tolls.
- d. To bring out a status report on environmental compliance.
- e. To assess the environmental performance and report it to management/authorities.

## 8. Audit Methodology

The scope of the audit is divided into various environmental areas like Land use, water, effluent, sewage, energy etc. Each such area is analyzed based on the evidences produced by the institute. The evidences are collected in form of discussions/interactions, documents and records, practical site conditions and photographs of it.

### 8.1 Observations and Recommendations

#### 8.1.1. Land Cover and Green-Belt Development

##### Land Use

Available total green atmosphere in the whole college campus is with a limit of 3000 square meters (approx.) of which 900 square meter occupies the garden area. Due to high crowd area around college premise, it is very difficult to have enough green belt for noise reduction within the campus. However, the college has still planted 31 large trees, some ornamental plants and 23 medicinal plants to have rich green effect. 3 special varieties of trees like Royal Poinciana, Yellow Poinciana and Indian Goose-berry is being planted within the campus and has plan to plant many herbs on the college campus in the next three years. Plantation and beautification are done from college funds only. Pond-water and groundwater are the two source of plant watering in the college (100 L per day and 2400 L per month). The college has established greenery committee who constantly look upon the garden area. Compost pit made from biodegradable waste is applied as manure on the garden area of the college which is really appreciable. The college has planted 4 fruit-bearing plants like coconut, mango, kul and koromcha. NSS team of the college mainly looks after the green cover, its sapling, watering, and prevention of plants through postering and precession activity. Yearly, 5 public programs are conducted by the college for green conservation.

##### Recommendations

Indoor plants like snake plant, money plant, spider plant, African violet etc. can be placed at the corner of each corridor of the college campus to reduce indoor air pollution and to enhance beautification. Localized plant species can be more used for plantation since they are more suitable to the local environment and habitat. Therefore it will become a habitat of the native birds, animals and insects and can help in biodiversity conservation and reclamation.



### 8.1.2. Water Supply

#### Water Sources

The main sources of water to the college campus are from groundwater, retaining water in pond, rainwater harvesting tanks and overhead tank of 10500 L capacity.

There is 1 tube-well present along with 3 wells of 600 ft depth of water along with submersible pump.

- 3 electric motors are used for water pumping.
- 2 HP, 1 HP and 0.5 HP are the total horse power of each motor.
- Only 50 L of water is pumped every day.
- From 30 water-taps 10 L of water is being used per day.
- 6 water purifiers are present but off no use at all due to lockdown.
- 5 water taps in canteen no water use due to lockdown,
- 2 water taps in each laboratory not used as remained closed due to lockdown,
- 6 water taps in hotels (not used).
- water taps, water purifier(500L)/month,
- 1000 L per day water used from rainwater harvesting tanks.

#### Recommendations

Water tax, water meter reading 6 months duration, green chemistry, recycling of water, more use of pond water. More installation of rainwater harvesting tanks, installation of atmospheric water generator, poster for water conservation to be made in the campus often, increase water holding capacity of college pond by dredging, install push taps. Periodic water audits can be planned and initiated at regular intervals.

### 8.1.3. Solid Waste Management

#### Solid Waste

No specific amount of solid waste is being generated from the college as the college canteen has been shut down due to lockdown and unavailable of student strength. Minimum amount of solid waste was generated from staff-rooms only which get disposed off smoothly to the Municipal Corporation.

#### Recommendations

Besides dumping of solid wastes in landfill, it can be treated through biodegradable fertilizer pit. Data of every day canteen waste can be taken up and can be displayed in the canteen board to educate the students and staff members about the wastage to aware about solid-waste effect in the environment and the human needs.

#### 8.1.4. Sewage Management

##### Sewage

Sewage is generated by the use of water for sanitary (100 liters per day) from 2 washrooms, one from staff-member and one from principal's office. Monthly 500 L of water get washed away through sewage line. The college has total 15 numbers of washrooms in the premise. The sewage generated after the use is connected to the municipal sewer lines through the underground tanks and minimum get mixed with underground water table.

##### Recommendations

Specific water audit can be conducted to know the water inflow and out flow along with the losses, leakages, wastages etc. to plan actions for water conservation.

#### 8.1.5 Energy Usage

##### Energy Source

Major source of energy usage in campus is from electric kettle, microwave at canteen and diesel from transportation.

9847 is the amount of diesel electricity expenses.

4 solar street light installed in college (48 kwh energy use/month), a common on/off switch has been fixed outside each classroom, LED bulbs and ACs are operated according to need and time basis, LED and incandescent bulbs are used in campus, 14 led bulbs(5 hrs/day/month),energy use from CFL-204 kwh/month, 2 incandescent bulb(5 hrs./day for 25 days), and 256 led tube present in college, led bulb(total energy usage-9.28 kwh/month),incandescent bulb(9.23 kwh/month),led tube(368.64 kwh/month), 17 street light run for 8 hrs./day/month, energy use by each bulb(50 watt\*8 hrs.\*30 days=12 kwh/month per bulb), (165 pcs ceiling fan-80 watt each,approx 100 kwh/month due to lockdown),(2 pcs wall fan-1000 watt each,144 kwh/month),(41 pcs small wall fan-50 watt each, no use due to lockdown).

(5 pcs exhaust fan-40 watt each, approx. 15 kwh/month)-total all appliance run for 6 hrs./day for 26 days i.e. total 259 kwh/month, Principal's room(2 pc ac- run maximum 5 hrs. on weekdays-252 kwh/month), office room(2 pcs AC maximum run for 4 hrs. on weekdays-201.6 kwh/month) teachers room 2 pcs AC maximum 4 hrs. on weekdays but not used at all due to lockdown as no teacher came to college, IQAC room 2 pcs AC 2 hrs. for 2 days /month assuming- not used, Auditorium 4 pcs AC 4 hrs. and 2 days in a month-not used at all at all Fridge 2 pcs not used due to lockdown, Aqua guard 5 pcs 27 kwh/month, Motor 3 pcs(1 HP-6.5 kwh/month,2 HP-13 kwh/month,0.5 HP-3.25 kwh/month) , Printer 9 pcs, Laptop 7 pcs 36.4 kwh/month, Projector 13 pcs not used due to lockdown, Router 8 pcs 6.24 kwh/month, Speaker 12 pcs not

used due to lockdown, Camera 16 pcs not used due to lockdown, 10 desktop computer 8 hrs./day for 12 days due to lockdown 192 kwh/month, Xerox or photocopy machine 2 pcs 4 hrs./day for 12 days 89.28 kwh/month, Cooling apparatus not used at all due to lockdown, 14 electrical equipment's available in lab no use due to lockdown, 1 microwave of 1000 watt present in canteen no use due to lockdown, 3 television in hostel no energy use due to lockdown, (Other energy use items include LED metal 2 pcs 50 watt 1 hr./day for 1 day 0.1 kwh, Led panel light 24 pcs 9 watt 4 hrs./day for 2 days 1.728 kwh, LED panel light 10 pcs 15 watt 4 hrs./day for 2 day 1.2 kwh)

Computer are kept in power-saving mode when remains not in use, AC run for maximum 5 hrs., Printers run for maximum 2 hrs.

Student awareness about energy conservation is done by poster and awareness at the time of orientation.

### Recommendations

Inverter should be installed for energy consumption during sudden load-shedding, switch –off drills can be installed, install rooftop solar plant, one energy audit yearly can be done.

#### 8.1.6. E-Waste

Since the organization is well established and equipped with the necessary and up-to-date electronic infrastructure, the e-waste generation like scraped computers, laptops, discarded xerox machines, tube-lights, bulbs, batteries are produced less than 20 kg per year. Hazardous wastes produced from chemistry lab (Less than 20 liters per month) are stored in compost pit but this waste is not produced at all as the lab was close due to lockdown and no students are allowed to enter in college campus. However, as a proactive initiative, an authorized vendor is identified for disposal of e-waste in case it is generated i.e. the college has tie-up with renowned E-waste company, Hulladek Recycling Pvt.Ltd and also signed with “MOU” (Memorandum of Understanding) this year to provide management of electronic waste.

### Recommendations

Immediate transfer of e-wastes to the authorized recycler should be ensured.

#### 8.1.7. Other Environmental Initiatives

NSS team and green committee members of the college have taken initiatives for “Biodiversity Conservation” whole year as well as in the pandemic year.

#### To commemorate World Environment Day

1. Students are encouraged to participate in online poster presentation, quiz competition and drawing competition on different topics related to environment.
2. They also undertook sapling or tree plantation in and around their houses.

#### Additional activities include:

3. Online environmental awareness campaign.

4. Monitoring the amount of water collected from rainwater harvesting tanks and watching the use of this water by the gardener for watering plants.
5. Arranged webinars maximum on environmental topics.
6. Arrange online class for fresher students to make them aware about environment.
7. Distribution of saplings among students and staff members by NSS team to increase awareness and understand the importance of plant kingdom.

## 9. Conclusion

The institute strives hard and sincere efforts are taken towards conservation of environment. Starting with the environmental awareness programs and implementing the practical changes like Solar Street-light installation to conserve energy and use of alternative energy resource. The institute has put lot of efforts in the water management also by installing rainwater harvesting system and has sufficient green cover. It is noteworthy that the college has arranged the compost fertilizer pit, plastic, and smoke-free zone for effective management of the environmental drives. It shows the commitment and responsibility towards the Mother Nature. Institute takes care of the students and staffs as well. The rooms are well ventilated, and the premise has enough space. There is no much noise that would disturb the education process as the college is surrounded by much considerable green belt.

There are always opportunities for improvements which are noted in the different sections for making the activities robust. These would help in the journey of sustainable development which already have been started and reached at a remarkable height.



ANNEXURE – 1



## P. N. DAS COLLEGE

Santinagar, Palta, P.O.: Bengal Enamel, North 24 Parganas, Pin - 743122 (W.B.)  
Phone : (033) 2592 1327, Fax : (033) 2592 1327, e-mail : pndc.principal11@gmail.com  
Website : www.pndascollege.in

NAAC ACCREDITED - 2016

Ref: PNDC/3497/E-Audit/2021

Date 02/08/2021

To  
Dr. Susanta Podder,  
38/F Vivekananda Road 2<sup>nd</sup> Lane,  
P.O.-Talpukur, Barrackpore,  
Kolkata-700123.

Sub: "Environmental Audit"

Dear Sir,

You are requested to conduct a Green Audit for the session 2020-21, of P. N. Das College, on 7th August 2021.

We would highly appreciate the service rendered by you.

Thank You,  
With kind regards,

**Principal**  
**P. N. DAS COLLEGE**  
Santinagar, Palta, 24 Pgs. (N)

Dr. Sharmila De  
Principal,  
P.N. Das College

ANNEXURE :2

Green Audit Survey: Session 2020-2021

1. Survey form for Auditing Water Management

1.	List uses of water in your college.	Used for toilets, kitchen, Garden, labs, fishery
2.	What are the sources of water in your college?	Ground Water, Retaining water in ponds, rain water
3.	How many wells are there in your college?	1 tube well, 3 wells for Submersible pump
4.	No. of motors with HP, used for pumping water from each well?	Total 3 Power: 2hp, 1 hp, ½ hp
5.	What is the depth of each well?	Depth of boring: 300 ft, 300ft, 200 ft TUBE well 650 ft
6.	What is the present depth of water in each well?	300 ft, 300ft, 200 ft Well 650 ft
7.	How does your college store water?	over head tanks, Rain Water harvesting, Ponds
8.	Quantity of water stored in your overhead water tank? (in litres)	2000 L x 2, 1500 L x1, 1000 L x 4, 500 L x 2= Total: 10500 L
9.	Quantity of water pumped every day? (in liters)	Less than <b>100 L</b> (Average) <b>(Due to Pandemic situation)</b>
10.	If there is water wastage, specify why.	For the use in toilets and Labs and hand washing points

11.	Where does waste water come from?	Water from toilets and Labs and hand washing points
12.	Where does the waste water go?	Water from toilets goes to High drain. Water from Lab goes to underground
13.	What are the uses of waste water in your college?	Not used
14.	What happens to the water used in your labs? Is it mixing with groundwater?	Goes underground. Negligible amount is used only in General Chemistry Laboratory with low student strength
15.	Is there any treatment for the lab water?	No.
16.	Are your labs practicing green chemistry methods?	No
17.	Water charges paid to water connections if any	None
18.	No. of water coolers. Amount of water used per day? (in litres)	3, Not Used ( <b>Due to Lockdown</b> )
19.	No. of bath rooms in staff rooms, common, hostels.	1, Staff Quarter, 2 in Ladies Hostel
20.	Amount of water used per day?	100 L (Bathrooms at Ladies hostel not used because there is no student at present)

21.	No. of toilet, urinals. Amount of water used per day?	13(Staff Room:1 NT Staff members:1 Principal Office:1 Library Building:2 Science Building:1 Students:4 Common Room:1 and Ladies' Hostel :2) <b>100 L approx. (Due to Lockdown)</b>
22.	No. of water taps in the canteen. Amount of water used per day?	5- Taps Not Used ( <b>Due to Lockdown</b> )
23.	Amount of water used per day for garden use.	Average: 50 L
24.	No. of water taps in laboratories. Amount of water used per day in each lab?	2 Not Used ( <b>Due to Lockdown</b> )
25.	At the end of the period, compile a table to show how many litres of water have been used in the college for each purpose	Given below
26.	Is there any water used for agricultural purposes?	No
27.	Does your college harvest rain water?	Yes
	If yes, how many rain water harvesting units are there? (Approx. amount)	1 system installed <b>(1000 L)</b>
28.	How many of the taps are leaky? Amount of water lost per day?	None (It is repaired immediately if found)



## 2. Survey form for Auditing Waste Management

1.	What is the total strength of students, teachers and Non-teaching staff in your College?	Total Students: 894 No. of Teachers:36 No. of Non Teaching Staff:17 Total :94 7
2.	Which of the following are available in your College? Give area occupied and number	
	Garden area	900 sq.m.
	Garbage dump (number)	2
	Playground area	790 sq.m +1030 sq.m.
	Laboratory	260 sq.m
	Kitchen Canteen	400 sq.ft
	Toilets (number)	15
	Car/scooter shed area	65 sq.m
	Number of classrooms and office rooms	No of Class Room: 20 Office Room: 4
	Others (specify) car parking zone	approx 160 sq.m.
3.	Does your college generate any waste?	Yes
	If so, what are they? How much quantity? Number or weight	
	E-waste	Scraped computer, laptop, Xerox machine etc. Less than 20 kg/year

	Hazardous waste (toxic)	Form Chemistry Lab. Less than 20 litres/ month
	Solid waste	Electrical waste like Tube, bulb, battery etc less than 20kg/year
	Canteen waste	Nil (Due to lockdown)
	Liquid waste	From Toilets, Canteen, Labs, open hand washing points (Negligible)
	Glass	Nil (Due to lockdown)
	Unused equipment	Electric equipments,
	Medical waste if any	Medical Room Nil (Due to lockdown)
	Napkins	Negligible
	Others (Specify)	
4.	Is there any waste treatment system in the college?	Yes, MOU with Hulladek Recycling Pvt. Ltd.
5.	Is there any treatment for toilet/urinal/sanitary napkin waste?	No
6.	What is the approximate amount of waste generated per day?  (in Kilograms) (approx.) Biodegradable non-biodegradable	Biodegradable: (Negligible)  Non-biodegradable: (Negligible)
7.	How is the waste generated in the college managed? Methods -  Composting, Recycling ,  Reusing ,Others (specify)	Stored in compost pit     No

8.	Do you use recycled paper in College?	No
9.	Can you achieve zero garbage in your college?  (Reduce, Recycle, Reuse, Refuse) If yes, how?	Plastic Free Zone

### 3. Survey form for Auditing Green Campus Management

1.	Is there a garden in your college? Area?	Yes,
2.	Do students spend time in the garden?	Yes
3.	List the plants in the garden, with approx. numbers of each species.	Given in the below
4.	List the species planted by the students, with numbers.	List given
5.	Whether you have displayed scientific names of the trees in the campus?	Yes for some trees and plants
6.	Are there any plantations in your campus? If yes specify area and type of plantation.	No
7.	Is there any vegetable garden in your college? If yes how much area?	No
8.	Is there any medicinal garden in your college? If yes how much area?	Yes,
9.	How much water is used in the vegetable garden and other gardens? Mention the source and quantity of water used.	Source: Ground water, ponds
10.	Who is in charge of gardens in your college?	Prof. AMAL KUMAR BHAKAT
11.	Whether you are using any type of recycled water in your garden?	No

12.	List the name and quantity of pesticides and fertilizers used in your gardens?	No fertilizer used except the manure from the compost pit
13.	Do you have any composting pit in your college? If yes What are you doing with the compost generated?	Yes Used as manure for the plants
14.	What are you doing with the vegetables harvested? Do you have any student market?	Na
15.	Is there any botanical garden in your campus? If yes give the details of campus flora.	No
16.	Name number and names of the medicinal plants in your college campus.	List given below
17.	Any threatened plant species planted/conserved.	No such
18.	Is there a nature club in your college? If yes what are their activities?	Yes, 1.To introduce the students with the plants. 2. To encourage students to save and plant trees. 3. Nature Tours are conducted for the students.
19.	Is there any arboretum in your college? If yes details of the trees planted.	No
20.	Are there any fruit yielding plants in your college? If yes details of the trees planted.	Yes, Coconut, Kul, Mango etc
21.	Are there any groves in your college? If yes details of the trees planted.	No
22.	Is there any irrigation system in your college?	No



23.	What is the type of vegetation in the surrounding area of the college?	The college is surrounded by big old trees
24.	Share your IDEAS for further improvement of green cover.	i) To increase the medicinal garden ii) Increasing fruit plants

#### 4. Survey form for Auditing Carbon Footprint

1.	What is the total strength of students and teachers in your College?	
	No. of Students	8944
	No. of Teachers	36
	No. of Non teaching staff	17
	Total	7
2.	Total Number of vehicles used by the stakeholders of the college.(per day)	1-2 (Average) (Due to lockdown)
3.	No. of cycles used	Less that 10 (Due to lockdown)
4.	No. of two wheelers used (average distance travelled and quantity of fuel and amount used per day)	1-2 (Due to lockdown)
5.	No. of cars used (average distance travelled and quantity of fuel and amount used per day)	None
6.	No. persons using common (public) transportation (average distance travelled and quantity of fuel and amount used per day)	Negligible (Due to lockdown)

7.	No. of persons using college conveyance by the students, nonteaching staff and teachers (average distance travelled and quantity of fuel and amount used per day)	None
8.	Number of parent-teacher meetings in an year? Parent turn out (approx.)	1-2 (Approx 100) (Done online)
9.	Number of visitors with vehicles per day?	Not allowed (Due to lockdown)
10.	Number of generators used every day (hours). Give the amount of fuel used per day.	1 Used only at the time of load shedding (Negligible)
11.	Number of LPG cylinders used in the canteen (Give the amount of fuel used per day and amount spent).	Nil (Due to lockdown)
12.	Average amount of taxi/auto charges paid per month by the stakeholders of the college.	Not calculated
13.	Use of any other fossil fuels in the college (Give the amount of fuel used per day and amount spent).	No
14.	Suggest the methods to reduce the amount of use of fuel by the stakeholders/students/teachers/non teaching staff of the college.	Personal cars are shared among the staff members

### Auditing for Green campus management

1. Is there a garden in your college? Area? **YES, 900 sq metre**
2. Is there concept based garden (star plants, medicinal plants, endemic species, agriculture, etc.), specify area for each. **MEDICINAL PLANTS**
3. Do students spend time in the garden? If so, approximate time and purpose. (Lists with priority Annexure-I). **NOT ALLOWED**
4. List the plants (scientific names, Family, etc.) in the garden, with approx. numbers of each species (Annexure-II).

SL NO	NAME OF PLANTS
1	KADAM ( NEOLAMARCKIA CADAMBA)
2	QUEEN CREPE MYRTLE (LAGERSTROEMIA SPECIOSA)
3	NEEM ( AZADIRACHTA INDICA)
4	<b>ROYAL POINCIANA</b> (DELONIX REGIA)
5	<b>YELLOW POINCIANA</b> ( PELTOPHORUM PTEROCARPUM)
6	JACKFRUIT (ARTOCARPUS HETEROPHYLLUS)
7	COCONUT( COCOS NUCIFERA)
8	MANGO ( MANGIFERA INDICA)
9	BLACKBERRY ( SYZYGIUM CUMINI)
10	DATE (PHOENIX DACTYLIFERA)
11	HOG PLUMS (PHOENIX DACTYLIFERA)
12	SIRIS TREE (SAMANEA SAMAN)
13	MAHOGANI ( SWIETENIA MAHAGONI)
14	LIMONIA (RAVENIA SPECTABILIS)
15	GUAVA (PSIDIUM GUAJAVA)
16	<b>INDIAN GOOSE-BERRY</b> ( PHYLLANTHUS EMBLICA)

17	TEAK ( TECTONA GRANDIS)
18	MANILA TAMARIND (ARTABOTRYS HEXAPETALUS)
19	MICKEY MOUSE PLANT (MICHELIA CHAMPACA)
20	WHITE CHAMPA ( MICHELIA CHAMPA)
21	KARANDA (CARISSA CARANDAS)
22	GULGUL (COMMIPHORA MUKUL)
23	MOSANDA ( TROTHIC SAGERETIA)
24	FARKERIA (CRASSULA OVATA)
25	KUL (ZIZIPHUS ZIZYPHUS)
26	WHITE OLEANDER (NERIUM OLEANDER)
27	CASUARINA (THUJA OCCIDENTALIS)
28	GOLDEN DURANTA ( DURANTA ERECTA)
29	JUNGLE GERANIUM ( IXORA COCCINEA)
30	CURRY LEAF ( MURRAYA KOENIGII)
31	EAR-LEAF ACACIA (ACACIA AURICULIFORMIS)

5. List of campus flora (attach a list of plants with details, including scientific name, family, approximate number of plants, etc.) in your campus. **Not Counted**
6. Name and number of the medicinal plants in your college campus.

SL NO	NAME OF THE PLANT
1	ALOE VERA (BITTER)
2	ALOE VERA (SWEET)
3	WHITE MALABAR NUT
4	RED MALABAR NUT
5	BLACK TURMERIC

6	ARROWROOT
7	CURDIMUM
8	LEMONGRASS
9	BILANGULI
10	EKANGI (RHIZOMA KAEMPFERIAE)
11	WHITE BASIL
12	LEMON BASIL
13	CLOVE BASIL
14	RED BASIL
15	BLACK BASIL
16	MINT
17	BRIGHT EYES
18	INDIAN SARSAPARILLA.
19	GREEN CHIRETTA
20	TOUCH ME NOT
21	BUTTERMILK ROOT
22	KAKAMACHI
23	AYAPANA

7. Any threatened plant species planted/conserved (provide a list with their threat status).  
**NO SUCH FOUND**

8. List the plants to be planted on your campus in the next three years.  
**(Trees, vegetables, herbs, etc.) TREES AND HERBS**

9. List the species planted by the students, with numbers (Annexure –III).

SL NO	NAME OF PLANTS
1	QUEEN CREPE MYRTLE (LAGERSTROEMIA SPECIOSA)
2	NEEM ( AZADIRACHTA INDICA)
3	MANGO ( MANGIFERA INDICA)
4	BLACKBERRY ( SYZGIUM CUMINI)
5	SIRIS TREE (SAMANEA SAMAN)
6	GUAVA (PSIDIUM GUAJAVA)
7	WHITE CHAMPA ( MICHELIA CHAMPA)
8	GULGUL (COMMIPHORA MUKUL)
9	KUL (ZIZIPHUS ZIZYPHUS)
10	CASUARINA (THUJA OCCIDENTALIS)
11	GOLDEN DURANTA ( DURANTA ERECTA)
12	JUNGLE GERANIUM ( IXORA COCCINEA)
13	CURRY LEAF ( MURRAYA KOENIGII)

10. Have you got any external funding for developing gardens in the campus? If yes, year, agency, and amount of funding. **NO**

11. Explain how you utilized funds for gardens. **FUNDS FROM COLLEGE ARE USED FOR PLANTATION, CLEANING, BEAUTIFICATION ETC**

12. Whether you have displayed scientific names of the plants in the Campus? **YES, FOR MEDICINAL PLANTS**
13. What are the vegetables cultivated in your vegetable garden? (Mention the quantity of harvest in each season). **NO**
14. How much water is used in the vegetable garden and other gardens? **NA**
15. Mention the source and quantity of water used (per month). **PONDS AND GROUND WATER**
16. Are you using any type of recycled water in your garden? **NO**
17. Who is in charge of gardens in your college? **Prof. AMAL KUMAR BHAKAT**
18. Is there any permanent staff to look after gardens in the campus? **YES, THERE IS GREENERY COMMITTEE CONSISTING OF PERMANENT STAFFS**
19. List the name and quantity of pesticides and fertilizers used in your gardens? **MANURE FROM COMPOST PIT**
20. Are you doing any organic practice in your campus? List them? **NO**
21. Do you have any composting pit (specify what compost) in your college? If yes, what you do with the compost generated? **YES. PIT FOR BIODEGRADABLE WASTE. MANURE IS USED FOR GARDENING**
22. Do you have a vegetable garden on the campus? **NO**
23. If yes, how the harvested vegetables are utilized? Do you have any market in the campus? **NA**
24. Is there a nature club in your college? If yes what are the activities? **Yes,**
- 1. TO INTRODUCE THE STUDENTS WITH THE PLANTS.**
  - 2. TO ENCOURAGE STUDENTS TO SAVE AND PLANT TREES.**
  - 3. NATURE TOURS ARE CONDUCTED FOR THE STUDENTS.**
25. Is there any arboretum in your college? If yes details of the trees planted. **NO**



26. Is there any fruit yielding plants in your college? If yes details of the trees planted.  
**YES; COCONUT, MANGO, KUL, KOROMCHA ETC**
27. Is there any groves in your college? If yes details of the trees planted. **NO**
28. Is there any irrigation system in your college? **NO**
29. What is the type of vegetation in the surrounding area of the college? **SURROUNDED BY OLD TREES AND FORMS A LUSH GREEN ATMOSPHERE.**
30. What are the nature awareness programs conducted in the campus? (2014-21). Provide a list (annexure-IV)  
**EVERY YEAR WE CELEBRATE**
- a) **TREE PLANTATION PROGRAMME ON 15TH AUGUST**
  - b) **WORLD ENVIRONMENT DAY**
  - c) **WORLD EARTH DAY**
  - d) **AWARENESS ON VECTOR BORNE DISEASES AMONG STUDENTS AND IN THE ADOPTED VILLAGE ALONG WITH LOCAL PEOPLE**
  - e) **HAND WASHING AWARENESS**
- SOME OTHER ACTIVITIES: A) CELEBRATE ARNYA SAPTAHA,**
- B) SEMINAR ON AMAZON FIRE,**
  - C) ORGANISED GANDHI GLOBAL SOLAR YATRA**
  - D) CARBON FOOTPRINT IS DONE**
31. What are the involvement of students in the green cover maintenance? Planting saplings and maintenance **STUDENTS MAINLY FROM NSS TAKE PARTS IN PLANTATION IN DIFFERENT OCCASIONS. WATERS NEWLY PLANTED SAPLINGS**
32. What is the total area of the campus under tree cover? Or under tree canopy?  
**APPROX. 3000 SQ.M**
33. Share your future plans for further improvement of green cover.  
**EXCEPT THE PLAYGROUND AND BUILT UP AREA MOST PART IS GREEN.**
- IN FUTURE WE WILL PLANT SOME FRUIT TREES**

34. Have you incorporated green conservation aspects in your curriculum?

**NO. CURRICULUM IS INDUCED BY OUR ALMA MATER UNIVERSITY**

35. How often you conduct public programs on green conservation?

**YEARLY 5 PROGRAMMES**

36. Do students reach out to the public in conveying the message of nature conservation?

**YES. IT IS DONE BY OUR NSS STUDENTS THROUGH POSTERING, PROCESSION ETC.**

***Questionnaire for Water Management Auditing***

1. What is the total Area of the campus? **4.285 acres/17340.75 Sq.Mt.**

2. Number of total teachers, non- teaching staff and students in the campus. **36+17+894=947**

3. Provide a list with different uses of water in the campus (Annexure 2-I).

**USED FOR TOILETS, KITCHEN, GARDEN, LABS, FISHERY**

4. Name different sources of water in your college?

**GROUND WATER, RETAINING WATER IN PONDS, RAIN WATER**

5. How many wells are there in your college?

**1 TUBE WELL, SUBMERSIBLE BORING, EXCESS WATER GOES TO**

**UNDERGROUND THROUGH 1 WELL**

6. Number of electric motors used for pumping water from each well? **3**

7. What is the total horse power of each motor? **Power: 2HP, 1 HP, ½ HP**

8. What is the depth of each well? **600 FT (TUBE WELL) 300 FT, 300FT, 200FT**

9. What is the present depth of water in each well?**600 FT (TUBE WELL) 300 FT, 300FT, 200FT**

10. How does your college store water?

**OVER HEAD TANKS, RAIN WATER HARVESTING, PONDS**

11. Capacity of the overhead water tank/s in the campus? (in litres)

**2000 L x 2, 1500 L x1, 1000 L x 4, 500 L x 2= Total: 10500 L**

12. Quantity of water pumped every day? (in litres) **50 L (Due to lockdown)**

13. How do you justify that the water usage is judicious in the campus?

a) **Amount of water used per day is low.**

b) **Poster for preventing the abuse of water has been there.**

c) **Awareness programmes are organised for the students.**

14. Is there any water wastage? If yes, specify why and how.

**NOT IN GENERAL. IT MAY HAPPEN BY MISTAKES OR SUDDEN LEAKAGE**

15. Is there any mechanism to identify water wastage in the campus, explain (Annexure 2-II).

**COMMITTEE CONSISTING OF FULL TIME STAFF IS THERE FOR MONITORING.**

16. What are the possible ways to check wastage of water? **CONTINUOUS INSPECTION.**

17. Is there any waste water generation happening in the campus?

**FOR UNAVOIDABLE SITUATIONS**

18. What are the possible sources of waste water in the campus?

**AT TOILETS AND HAND WASHING POINTS**

19. Where does the waste water go? **CANAL THROUGH DRAIN**

20. Are you reusing the waste water after recycling it? **NO**

21. What are the systems of management of water used in your labs, especially Chemistry lab (or labs where experiments are happening involving chemicals)?

**AMOUNT OF WATER USED IS NEGLIGIBLE ONLY AT CHEMISTRY LAB WITH A VERY LOW STUDENT STRENGTH**

22. Does this water get mixed with ground water? **YES**

23. Is there any treatment for the lab water after usage? **NO**

24. Is there a system of practice of green chemistry in your campus? Give details. **NO**

25. Write down four ways that could reduce the amount of water used in your college.

a) **RECYCLING OF WATER**

b) **MORE USE OF POND WATER**

c) **INSTALLATION OF RAINWATER HARVESTING SYSTEM**

d) **INSTALLATION OF ATMOSPHERIC WATER GENERATOR**

26. Record of water use from the college water meter for six months. **There is no water meter**

27. Amount, if any, as charges towards water paid for water connections. **None**

28. Number of water coolers in the campus. Amount of water used per day? (in litres)

**3, Not used (Due to lockdown)**

29. Number of water purifiers in the campus, if any. **6**

30. Number of water taps in the campus. Amount of water used per day?

**Nearly 30, Approx. 10 L (Due to lockdown)**

31. Number of bath rooms and toilets separately for staff rooms, common, hostels

(Annexure 2- III)

**No. of Bathrooms: 1 (Staff Quarter)**

**2 (Ladies Hostel)**

**No. of Toilets:**

**(Staff Room:1**

**NT Staff members:1**

**Principal Office:1**

**Library Building:2**

**Science Building:1**

**Students:4**

**Common Room:1 and**

**Ladies' Hostel :2)**

32. Number of toilets?**13**

33. Amount of water used per day in the toilets? **Nearly 100 Litres**

34. Number of water taps in the canteen. Amount of water used per day? **5, Not used (Due to lockdown)**

35. Amount of fire-wood used in the canteen kitchens? **None**

36. How much ash collected after burning fire wood per day in the canteen? **None**

37. Amount of water used per day for irrigation purpose. **Not used**

38. Number of water taps in laboratories. Amount of water used per day in each lab? **2, Not Used (Due to lockdown)**

39. Number of taps in hostels. **6**

40. Total use of water in each hostel? **Not used because there is no student at present**

41. Provide a list of month wise water usage in different areas in the campus:

Sl. No.	Area of the Campus	Water used per month
1	Water taps	500 L
2	Toilets	500 L
3	Water Purifier	500 L
4.	Cooler	<b>Not used (Due to lockdown)</b>
5	Bathrooms	1000 L
6	Garden	2400 L

42. Is there any water used for agricultural purposes? **No**

43. Is there any rain water harvest system in the campus? If yes, details of the storage capacity? **Yes, (1000 L per day)**

44. Report on the status of their functioning. **Water collected is refined and used for toilets and excess water is sent the underground through filter.**

45. Provide number of damaged taps in the campus? **Amount of water lost due to damaged taps or water supply system per day?. None, it is repaired immediately if found damaged**

46. How do you convey the message of water conservation in the campus?  
**Through poster and verbal awareness**

47. How many water fountains are there?        **None**

48. How often is the garden irrigated? **2-3 times a week**
49. Amount of water used to water the ground? **Average 100 L/Day**
50. Amount of water used for college bus cleaning? (litres per day) **NA**
51. Is there any other way by which water is being utilized?.**No**
52. Area of the college land which is under concrete tiles. **Approx. 3700 sq. mt**
53. Is there any future plan for the water management in the campus?
- a) **To install an atmospheric water generator**
- b) **To increase water holding capacity of the ponds by dredging**
54. Are there any water saving techniques followed in your college? Explain?
- a) **Continuous awareness among the stakeholders**
- b) **Active Monitoring System**
- c) **Push taps have been installed**
55. Is there any mechanism by which the message on water conservation is being conveyed to staff and students? **Through poster and verbal awareness**

### ***Questionnaire for Energy Management Audit***

1. List out ways of energy usage in the campus. (Electricity electric stove, kettle, microwave, incinerator; LPG, firewood, Petrol, diesel and others). **Electric kettle, Microwave at Canteen, Diesel**
2. Electricity bill amount for the last three years.
- 2016-2017: Rs. 213197**
- 2017-2018: Rs: 215622**
- 2018-2019: Rs: 200263**
- 2019-2020: Rs. 155296**
- 2020-2021: Rs. 97105**
3. Amount paid for LPG cylinders for the last three years. **College does not buy any LPG Cylinders. Canteen personnel arrange it. Monthly One cylinder is used on an average.**

4. Any other payments towards energy related matters for the last three years in the campus:

Environment Related Expenditure						
Session	Gardening including Gardener's Salary	Ground Dev/ Cleaning Ch.	NSS Activities (Regular)	Electricity EXP.	Others	Total
20-21	40820		690	97105		<b>138615</b>
19-20	82150	31500	6160	155296		<b>275106</b>
18-19	69197	41000	18359	200263	9000	<b>337819</b>
17-18	110681	Year	26694	215622		<b>352997</b>
16-17	64513	45000	33979	213197	24500	<b>381189</b>
<b>Total</b>	<b>367361</b>	<b>117500</b>	<b>85882</b>	<b>881483</b>	<b>33500</b>	<b>1485726</b>

5. Weight of firewood used per month and the amount of money spent? Also mention the amount spent for petrol/diesel/others, if any?

**Expenses for Diesel: (The amount is included in Electricity Expenses)**

Year	17-18	18-19	19-20	20-21
Expenses on Diesel	16766	18504	45721	9847

6. Are there any energy saving methods employed in your college? If yes, please specify.

**Yes, a) Solar lights have been installed**

**b) A common on/off switch has been fixed outside each class room**

**c) LED bulbs are used**

**d) AC's are operated according to need basis and time basis.**

7. What are the types of bulbs used in campus?

Ans:- **LED, Incandescent.**



8. Provide a list of number of bulbs each type.

Ans:-

<b>1. LED bulb</b>	<b>14 pcs</b>
<b>2. Incandescent bulb</b>	<b>2 pcs</b>
<b>3. LED Tube</b>	<b>256 pcs</b>

9. Provide the total energy utilization by each types of bulb per month

Ans:-

<b>1. LED bulb (5hrs/day for 12 days)</b>	<b>9.28 kwh/month</b>
<b>2. Incandescent bulb (5hrs/day for 12 days)</b>	<b>9.23 kwh/month</b>
<b>3. LED tube (6hrs/day for 12 days)</b>	<b>368.64 kwh/month</b>

10. How many CFL bulbs has your college installed? Mention use

(Hours used/day for how many days in a month)

Ans:- **Street light- 17 pieces. (8hrs/day for 30 days.)**

11. Energy used by each bulb per month?

Ans:- **50 Watt \*8hrs \*30days= 12 kwh/month per bulb.**

12. How many LED bulbs has your college installed? Mention use

(Hours used/day for how many days in a month)

Ans:- **14 LED. (5hrs/day for 30 days)**

13. How many Incandescent (tungsten) bulbs has your college installed? Mention use  
(Hours used/day for how many days in a month)

Ans:- **2 Incandescent (5hrs/day for 25 days)**

14. How many fans installed in the campus? Mention use  
(Hours used/day for how many days in a month)

Ans:-

<b>Ceiling fan</b>	<b>165 pcs</b>
<b>Wall fan (big)</b>	<b>2 pcs</b>
<b>Wall fan (small)</b>	<b>41 pcs</b>
<b>Exhaust fan</b>	<b>5 pcs</b>

(6hrs/day for 26 days)

15. Energy used by all fans per month?(kwh)

<b>Ceiling Fan(165pcs-80watt each)</b>	<b>Approx. 100 kwh/month (Due to lockdown)</b>
<b>Wall fan(big) (2pcs-1000watt each)</b>	<b>144 kwh/month</b>
<b>Wall fan (small) (41pcs-50 watt each)</b>	<b>Negligible due to lockdown</b>
<b>Exhaust fan (5pcs-40watt each)</b>	<b>Approx. 15 kwh/month</b>
<b>Total</b>	<b>Approx. 259 kwh/month</b>

16. How many air conditioners are in use in the campus? Mention time of their usage

(Hours used/day for how many days in a month)

<b>Principal's Room</b>	<b>2pcs(maximum 5hrs on weekdays)</b>
<b>Office room</b>	<b>2 pcs (maximum 4hrs on weekdays)</b>
<b>Teachers room</b>	<b>2 Pcs(maximum 4hrs on weekdays)</b>
<b>IQAC room</b>	<b>2pcs(Only at the time of meeting)(assuming 2hrs for 2days in one month)</b>
<b>Auditorium</b>	<b>4 pcs (Occasionally for conducting any programme) ( assume 4hrs and 2 days in a month)</b>

17. Energy used by all air conditioners per month?(kwh) (Calculated for 12 Days/month Due to Pandemic situation)

<b>Principal's Room</b>	<b>252 kwh/month</b>
<b>Office room</b>	<b>201.6 kwh/month</b>
<b>Teachers room</b>	<b>Not used due to lockdown</b>
<b>IQAC room</b>	<b>Not used due to lockdown</b>
<b>Auditorium</b>	<b>Not used due to lockdown</b>

18. How many electrical equipments including weighing balance used in the campus?

Mention time of their usage (Hours used/day for how many days in a month)

<b>Fridge</b>	<b>2pcs</b>
<b>Aquaguard</b>	<b>5pcs</b>
<b>Motor</b>	<b>3pcs(1HP,2HP,0.5HP)</b>
<b>Printer</b>	<b>9pcs</b>
<b>Laptop</b>	<b>7pcs</b>
<b>Projector</b>	<b>13pcs</b>
<b>Router</b>	<b>8pcs</b>
<b>Speaker</b>	<b>12pcs</b>
<b>Camera</b>	<b>16pcs</b>

19. Energy used by such electrical equipment per month?(kwh)

Ans:-

<b>Fridge</b>	<b>Not used due to lockdown</b>
<b>Aqua guard</b>	<b>27 kwh/month</b>

<b>Motor</b>	<b>1hp= 6.5kwh/month, 2hp= 13kwh/month, 0.5hp=3.25kwh/month</b>
<b>Printer</b>	<b>46.8kwh/month</b>
<b>Laptop</b>	<b>36.4kwh/month</b>
<b>Projector</b>	<b>Not used due to lockdown</b>
<b>Router</b>	<b>6.24kwh/month</b>
<b>Speaker</b>	<b>Not used due to lockdown</b>
<b>Camera</b>	<b>Not used due to lockdown</b>

20. How many computers were in use in the campus? Mention time of their usage

(Hours used/day for how many days in a month)

Ans:- **10 pcs Desktop. (8hrs/day for 12days) ( due to lockdown)**

21. Energy used by all computers per month?(kwh)

Ans:- **192 kwh/month.**

22. How many photocopier machines are installed and in use at present in the campus?

Mention time of their usage (Hours used/day for how many days in a month)

Ans:- **2pcs and all are in use. (4hrs/day for 12 days)**

23. Energy used by all photocopier per month?(kwh) Mention time of their usage

(Hours used/day for how many days in a month)

Ans:- **89.28 kwh/month (4hrs/day for 12 days)**

24. How many cooling apparatus are present in the campus? Mention time of their usage (Hours used/day for how many days in a month)

Ans:- **Not used due to lockdown**

25. Energy used by all cooling apparatus per month? (kwh) Mention time of their usage

(Hours used/day for how many days in a month)

Ans:- **NA**

26. How many inverters did your college install? Mention time of their usage

(Hours used/day for how many days in a month)

Ans:- **None**

27. Energy used by each inverter per month?(kwh)

Ans:- **N.A.**

28. How many electrical equipment are installed in different labs (methods that are not included in the above calculations) in the campus? Mention time of their usage

(Hours used/day for how many days in a month)

Ans:-

<b>Chemistry lab</b>	<b>2</b>
<b>Physics lab</b>	<b>12</b>

29. How many electrical equipments are available in all labs in the campus?

Ans:- **14**

30. Energy used by all equipments together per month?(kwh)

Ans:- **Not used due to lockdown**

31. How many heaters used in the canteen of your college? Mention time of their usage

(Hours used/day for how many days in a month)

Ans:- **1 Micro oven(1000 watt)**

32. Energy used by each heater per month?(kwh)

Ans:-**Not used due to lockdown**

33. No. of Street lights in your college?

Ans:- **17 CFL, 4 Solar.**

34. Energy used by all street lights per month? (kwh)

Ans:- **CFL= 204kwh, Solar=48kwh**

35. No. of televisions in your college and hostels?

Ans:- **3 Televisions.**

36. Energy used by all TV's per month? (kwh)

Ans:- **None. (TVs are not used)**



37. Any other items that uses energy(Please write the energy used per month) Mention time of their usage (Hours used/day for how many days in a month)

Ans:-

Items	No and wattage	Kwh/month
LED metal	2pcs-50 watt(assume 1hr/day for 1 day)	0.1kwh
LED Panel Light	24pcs-9 Watt(assume 4hr/day for 2day)	1.728kwh
Led panel light	10pcs-15 watt(assume 4hr/day for 2 day)	1.2kwh

38. Does the campus have any alternative energy sources/nonconventional energy sources? (photovoltaic cells for solar energy, windmill, energy efficient stoves etc.) Specify.

Ans:- **Yes. 4 solar street lights.**

39. Do you run "Switch Off" drills at college?

Ans:- **No**

40. Are your computer and other equipment put on power-saving mode?

Ans:- **Yes when it remains idle.**

41. Does your machinery (TV, AC,Computer,Weighing balance, printers etc.) runs on stand by modes of the time? If yes how many hours?

Ans:- **TV is not used, AC's are run for maximum 5 hours, Printers are used maximum 2 hours**

36. What are the energy conservation methods adapted by your college?

Ans:- **(i) Solar lights have been installed**

**(ii) a single switch has been set up outside each class room.**

**(iii) LED lights have been installed in the campus**

**(iv) AC, Coolers etc. are used as per restricted duration.**

37. Is there any public awareness systems informing the necessity of energy conservation in the campus?

Ans:- **Postering in different places, Awareness among the students at the time of orientation.**

38. Write a note on the Methods/practices/adaptations by which you can reduce the energy use in your college campus in future.

Ans:- **Our main aim in this regard is to install a rooftop solar plant for sufficient energy supply.**

### ***Questionnaire for Carbon footprint Auditing***

- Total number of students and teachers in your College?

Gender	No of students	No of Teachers	No of non-teaching staff
Male	<b>387</b>	<b>20</b>	<b>15</b>
Female	<b>507</b>	<b>16</b>	<b>2</b>
Transgender	<b>0</b>	<b>0</b>	<b>0</b>
Total	<b>894</b>	<b>36</b>	<b>17</b>

1. Total Number of vehicles used by the stakeholders of the college/per day.

**(Cycles 5+ 3 bikes + 3 cars)**

2. No. of cycles used/day in the campus. **4-5 ( due to lockdown)**

3. No. of two wheelers used (average distance travelled, cc of two wheelers and quantity of fuel and amount used/day). (C.F-Annexure-I).

**No. of two wheelers used: 2-3**

**average distance travelled: 100 km**

**cc of two wheelers 150 CC X 10=1500 CC Approx.,**

**quantity of fuel 2 Ltr. Approx.**

**amount used/day Rs. 180/ Approx.**

4. No. of cars used (average distance travelled, power of engine (cc) and quantity of fuel and amount used/day). (C.F-Annexure-II).

**No. cars: 2-3**

**CC of cars: 1000 cc/1200cc**

**Fuel used: 10 Liters**

**Amount: Rs. 1000/ approx.**

5. No. persons using common (public) transportation (average distance travelled and quantity of fuel and amount used/day).

**Not Calculated**

6. No. of persons using college conveyance (general transportation) by the students, non-teaching staff and teachers (average distance travelled and quantity of fuel and amount used per day): **Nil**

7. Number of parent-teacher meetings in a year? Parents turned up (approx.)

**Average 2 meetings:**

**Parents turned up: 100 for each meeting (Done online)**

8. Mention their mode of travel and give approximate cost of their commutation.

**Public Transportations /Motor Cycles /Cars.**

**Cost not calculated**

9. Number of visitors with vehicles per day? **Not allowed due to lockdown**

10. Number of generators used/day (hours). Provide quantity and amount for fuel usage/day.

**11. Used only at the time of load shedding**

**Average 1 liter/day**

**Rs.70**

12. Number of LPG cylinders used in the campus. Provide quantity and amount of fuel used /day.

**1 (Less than 1 liter)**

13.Quantity of kerosene used in the canteen/labs (Provide quantity and amount of fuel used per day and amount spent). **Not Used**

14. Amount of taxi/auto charges paid and the amount of fuel used per month for the transportation of vegetables and other materials to the campus.

**N/A (Goods Supplied by dealers)**

15. Amount of taxi/auto charges paid per month for the transportation of office goods to the college. **N/A (Goods Supplied by dealers)**

16. Amount of taxi/auto charges paid per month by the stakeholders of the college.

**Less than Rs.1000/- Approx. ( due to lockdown)**

17.Use of any other fossil fuels in the college (Give the amount of fuel used per day and amount spent). (C.F-Annexure-III). **Not Applicable**

18.What are the methods you might adopt in the future to reduce the quantity of fuel used by the stakeholders/students/teachers/non-teaching staff of the college.

**a) Sharing vehicles**

**b) Awareness on saving energy**

**c) Insisting on more use of bicycles.**

**d) Generator fuel may be reduced by introducing rooftop solar plant**