Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Email: sciencecollegeidar@gmail.com

Website: www.gscidar.edu.in

Ref.: No. **Date::**

7.1.3. Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following:→

Particular	Details	Page number
Green audit / Environment audit	Click to download	All
Energy audit	Click to download	38-49
Clean and green campus initiatives	Click to download	---
Beyond the campus environmental promotion activities	Click to download	57-65
certificate of Universal Consultancy, Vadodara	Click to Download	55-56

GOVT. SCIENCE COLLEGE * IDAR * GOVT. OF GUJARAT

Principal
Government Science College
Idar(S.K.)

6. Carbon Footprint Reduction

6.1 Office / Building Survey

Information on Office-based environmental impacts like built-up area, utility bills, energy-saving devices and IT equipments was collected. This information added to the carbon footprint data, generating a fairly clearer picture of the College's annual greenhouse gas emissions and impact of the reduction measures undertaken.

6.2 Carbon Footprint

- **Carbon footprints** is historically defined as *the total set of greenhouse gas emissions caused by an individual, event, organization or product, expressed as* ***carbon dioxide equivalent.***
- ***Carbon Footprint is measured in tCO_2. tCO_2eq stands for "Tones of CO_2 equivalent"***
- Our *'Carbon Footprint'* is a measurement of all GHG we individually produce to live. The amount of GHG produced depends on our lifestyle and consumption pattern.
- It also depends on how a product is made which we are consuming. If GHG production is more, then we say our carbon footprint is more. If it is less then we say our carbon footprint is small. We should strive to achieve a carbon footprint as small as possible.

- The largest amount of greenhouse gas emission-almost 80%- comes from the energy sector.
- Oil, coal and natural gas- all fossil fuels- supply most of the energy to run vehicles, & generate electricity for industries.
- This sector is responsible for about three-fourth of CO_2 emissions, one-fifth of CH_4 emissions, & large qty. N_2O.
- There are many other sectors such as Agriculture and Animal Husbandry, Deforestation, Waste & Waste water, Residential & Commercial buildings etc. leading to carbon footprint.
- In this report we have concentrated to carbon footprint because of vehicles and electricity consumed and carbon handprint considering landscape, flora and fauna.
- Data collected from the following sources were taken into consideration to calculate carbon footprint emission and reduction. The floristic richness of the campus – total number of plants, trees, shrubs – was estimated. The impact of alternate green energy production and consumption to reduce fossil fuel-based energy was assessed, e.g the number of CFL, LED, tube lights and electronic chokes was counted. The Carbon Footprint Calculator was used to arrive at conclusions.
- Carbon Footprint Calculator enables the measurement of carbon emission by the College. Besides, by Breaking down the value to key 'carbon drivers', the College can know how much of carbon footprint comes from which type of

behaviour (high power-consuming incandescent bulbs vs. LED lights, solid waste management, etc.).

6.3 Carbon Audit Tools & Analysis

The Carbon Audit tools and analysis methodology were developed collectively by the Green Audit Assessment Team and based on that the audit was conducted in ten major thematic areas.

1. Flora & Carbon Footprint Reduction
2. Sustainable Site
3. Water Efficiency & Water Audit
4. Energy Efficiency & Energy Audit
5. Indoor Environmental Quality
6. Eco-friendly Commuting Practices --Green Transportation
7. Green Construction Material
8. Health & Comfort
9. Post Occupancy Waste Management System

6.4 Flora & Carbon Footprint Reduction

The large area of the College goes live with its green policy. The manifestation of the "Go Green" tree campaign truly finds expression in every nook and corner of the College to a great extent. For example, it is worthy to mention that despite the region being an arid region the College through its efforts towards environmental protection has ensured the plantation and successful maintenance of more than 1550 number of trees

ensuring a pristine green cover for the students, faculties, and also for the wildlife that includes animals, birds and reptiles. Hence also as part of the pedagogy a Botanical Garden has been established which serves as a centre for ecological consciousness and learning. For the students and for the community at large, a beautiful Garden has also been developed to help the people appreciate the gift of nature, especially during the months of summer. Further, regularly, the campus conducts plantation drive with various stakeholders including the alumni and public representatives. The biodiversity surveys conducted by various departments has documented following flora fauna in campus;

Carbon footprints is historically defined as *the total set of greenhouse gas emissions caused by an individual, event, organization or product, expressed as* ***carbon dioxide equivalent.***

Floristic status of the College

After deducting the built-up area along with playgrounds, the projected area available to develop various types of flora is 3,194 sq.mt.

There are 12 families, 25 genera and 56 species of trees, shrubs, herbs (including potted plants) and climbers in the campus.

- 56 species of trees
- 10 species of shrubs
- 20 species of herbs
- 9 species of climbers (including creepers)

About 560 to 700 fully grown trees shall be raised in 1 acre of land. This depends on the type of soil, the species/family of the tree and the spacing. However, with the normal spacing of 6 x 10 feet, the total number of trees shall be taken up as 600/acre. This is a theoretical consumption. The Green & Environment Audit Team of the College counted the number of plants: full-grown trees (above 10 years), semi-grown trees (below 10 years), shrubs and lawn (sq.ft. area).

The following table will illustrate these figures

Sr. No.	Particular of Flora	Designation
1	Full –grown trees	300
2	Semi –grown trees	50
3	Bushes (including floriculture plants)	50
4	Lawn	14,025 sq. ft.

Tool to Measure Carbon absorption by flora in the campus

Assumptions

1. Number of mature trees in 1 acre = 700
2. Carbon absorption capacity of 700 trees is equivalent to carbon emitted by a speeding car for 26,000 miles
3. 26,000 miles = 41,843 km
4. Average kilometres covered by a car per litre of petrol is 20 km
5. Total quantity of petrol consumed by the car (41,843/20) = 2092 litres

The carbon emitted by a car due to consumption of 1 litre of petrol is 2.3 kg CO_2. At this rate the total quantity of carbon emitted by 2092 litres of petrol (2092 x 2.3 kg) = 4812 kg CO_2 or 4.8 tonnes of CO_2.

Therefore, the carbon absorption of one full-grown tree is 4812/700 = 6.8 kg CO_2.

The footprint calculation is based on the standard unit of 1 litre petrol = 2.3 kg CO_2.

6.5 Carbon Absorption by Flora

Carbon absorption capacity of one full-grown tree = 6.8 kg CO_2.

1) Therefore, the carbon absorption capacity of 300 full-grown trees in the campus of the College (300 x 6.8 kg CO_2.) = **2040 kg or 2.04 tonnes of CO_2.**
2) The carbon absorption capacity of 50 semi-grown trees is 50 % of that of full- grown trees. Hence, the carbon absorption (50 x 3.4 kg CO_2.) = **170 kg or 0.17 tonnes of CO_2.**
3) There are 50 bushes of various species being raised in the gardens of the College. Carbon absorption of bush plants varies widely according to the species. Certain bushes absorb as high as 49,000 g CO_2. per plant, whereas some others absorb as low as 150 g CO_2 per plant. In the absence of a detailed scientific study and botanical survey, the per-plant carbon absorption was assumed to be 200 g (in consultation with environment scientists). Based on this, the total carbon absorption

of 50 plants was calculated to be 50 x 200g = 10,000 g or **10 kg or 0.01 tonnes of CO_2.**

4) The Green & Environment Audit Assessment team looks after the maintenance of landscape on the campus. Buffalo variegated grass, Mexican grass and indigenous grass species are being raised and maintained in the lawn. The total area of the lawn is 14,025 sq. ft. The carbon absorption capacity of 10-sq.ft. area of lawn is 1 g CO_2. Hence, 14,025 sq. ft. of lawn absorbs **1402 g or 1.402 kg CO_2. per day**. At this rate, the total carbon absorption per year (1.402 kg x 365) = 511.73 kg or **0.5 *tonnes*** per year.

The grand total of carbon absorption by the flora in the College Campus is (1+2+3+4) = 2.72 tonnes.

This is the sink effect of the flora in the campus.

Tool to measure oxygen emission by flora in campus

According to the Arbor Day Foundation, 'a mature leafy tree produces as much oxygen in a season as 10 people inhale in a year'.

A person breathes 7 or 8 litres air per minute. Air is about 20% oxygen. But the exhaled air has about 15% oxygen, and hence the net consumption is about 5 %. Therefore, a person uses about 550 litres of pure oxygen each day.

6.6 Oxygen Emission by Flora

The number of litres in 1 kilogram depends on the density of the substance being measured. Litre is a unit of volume, and kilogram a unit of mass. Litres and kilograms are approximately equivalent when the substance measured has a density of close to 1 kilogram per litre.

On an average, one full–grown tree produces nearly 260 pounds or 117.6 kg of oxygen each year. Two mature trees can provide enough oxygen for a family of four.

1) Total oxygen emitted by 300 full –grown trees per year (117.6 kg x 300) = 35,280kg or **35.28 *tonnes.***

2) Total oxygen emitted by semi- grown trees (58.8 kg x 50) = 2,940 kg or **2.94 tonnes** (oxygen emission in 50 % of that of the fully grown trees).

3) Total oxygen emitted by 50 bushes is calculated based on the following oxygen –inhaling requirement per person per day. A normal human being requires 550 litres of oxygen per day. 400 bushes produce enough oxygen per day to enable a person to breathe adequate quantity of oxygen of 550 litres. Total quantum of oxygen produced by 400 plants per day is 550 litres of oxygen.

Taking 400 plants as one unit, the number of units of bushes in the campus (50/400) = 0.125

Total quantity of oxygen produced by 0.125 units (0.125 x 550 litres) = 68.75 litres of oxygen per day.

The annual production of oxygen at this rate (68.75 x 365) = 25,094 litres or kg of oxygen, which is approximately **25.09 tonnes of oxygen.**

Lawn is an incredible oxygen –making machine. A 25-sq.ft. area will supply enough oxygen to support one person for a day. Quantitatively speaking, this area of grass produces 550 litres of oxygen per day.

The total area of lawn in the campus is 14,025 sq. ft. In units, the value (14,025/25) = 561 units, which produce (561 x 550 litres of oxygen) = 3,08,550 litres of oxygen per day. Total quantity of oxygen produced by the 10,828 sq. ft of lawn per year (3,08,550 litres/day x 365) = 11,26,20,750 litres or approximately **1,12,620 tonnes.**

6.7 Carbon Footprint Reduction Table

- **Carbon dioxide absorption**

Sr. No.	Flora	Quantity of CO_2 (tonnes)
1	300 Full –grown trees	2.04
2	50 Semi –grown trees	0.17
3	50 Bushes	0.01
4	14,025 sq. ft. Lawn	0.50
	Total	**2.72 say 3**

- ***Oxygen emission by flora***

Sr. No.	Flora	Quantity of O_2 (tonnes)
1	300 Full –grown trees	35.28
2	50 Semi –grown trees	2.94
3	50 Bushes	25.09
4	14,025 sq. ft. Lawn	1,12,620
	Total	**1,12,683.31** **Say 1,12,600**

GREEN COVER ON THE CAMPUS

GREEN COVER ON THE CAMPUS

GREEN COVER ON THE CAMPUS

8. Eco-friendly Commuting Practices

Eco-friendly commuting practices can also be termed as Green Transportation.

Emission of CO_2 through transport system – both public and private – is very high in India as India is credited with the third rank in carbon emission in this regard. It is estimated that in India, 9% of the total carbon is emitted by the transport system.

Idar being a small town, there is no city bus available to reach up to the College. Hence students can even walk down to College. Most of the students attend Idar college from adjoining villages and towns. The frequency of State Transport Bus is good enough to rely upon this system. This prevents students and staff to use their own private vehicle to reach up to the College. This prevents the emission because of transportation. This is considering the fact that the College building is located besides the main road.

The College Management has taken a principle stand right from the beginning to encourage students to use the public transport system or walking or use bicycle to reduce carbon emissions.

Unfortunately, after globalization, there has been a continuous increase in the income of the 100 million plus middle class families along with the automobile boom. As a result, the student community and teaching faculty members of the College are using two wheelers and four wheelers in large numbers and the trend has been on the increase. This is inspite of creating

awareness to use public transportation or bicycle or walking. Hence it is appropriate, in this context, to analyze the carbon dioxide emissions from the fleet of four wheelers and two wheelers owned by the individuals even though the College does not pollute the atmosphere directly.

The College Management has been successful to convince students and staff to commute in public transportation and hence it is a great achievement for the College that not more than about 27 numbers of two wheelers and not more than 6 numbers of four wheelers reach College daily and this figure includes vehicles used by teachers and administrative staff along with the visitors.

8.1 Vehicles on the campus & it's carbon emission

The following data indicate the quality of diesel consumed by the vehicles during the last year. There are 6 numbers of four wheelers, and 27 two wheelers used by students and staff. It is appropriate to calculate the petrol consumption separately for four wheelers and two wheelers. The survey conducted among students / staff who own two wheelers reveals that they use the vehicles not only for visiting the College, but for moving after college hours and holidays. It is estimated that the average mileage covered by each staff / student is about 30 km/day. The total mileage covered by the 27 two wheelers per year (27 x 30 x 365) = **2,95,650 km.**

Apart from that 6 numbers of four wheelers are used by the students / faculty members and the average mileage covered is

also the same, 30 km per day. Hence the total mileage covered by 6 numbers of four wheelers per year is (6 x 30 x 365) = **65,700 km.**

The total mileage covered by two and four wheelers per year (2,95,650 + 65,700) = ***3,61,350 km***.

The fuel consumption by vehicle is determined by the type of vehicle, year of manufacturing, maintenance status, traffic system of the particular area, etc. High-end and medium- range bikes consume different quantities of petrol. However, for the sake of convenience, 35 km per litre is taken as the standard to calculate the carbon emission of two wheelers. Based on this, the total quantity of petrol consumed for covering 2,95,650 km is (2,95,650/35) = **8,447.14 litres say 8,447 litres**

A medium-range four wheelers covers 16 km per litre of diesel. Based on this the total quantity of diesel consumed by 6 four wheelers per year (65,700/16) = **4,106.25 litres say 4,106**

Thus, the total fuel consumption per year (8,447 + 4,106) = 12,553 litres (both petrol and diesel).

Conversion table to calculate carbon emission by vehicle per litre is very complicated in view of the local variable to be taken for calculation.

Instead, a simple but universally accepted calculation calendar for various types of fuels and their CO_2 conversion rate was adopted.

As per this calculation calendar, combustion of 1 litre of diesel/petrol leads to the emission of 2.68 kg of CO_2. At this rate,

the total quantity of CO_2 emitted by 12,553 litres of fuel (12,553 x 2.68) = **33,642.04 kg = 33.64 tonnes.**

The carbon emission into the atmosphere is 33.64 tons because of vehicles moving on the campus and for education purpose out side the campus.

Considering this emission of the CO_2, the Institution has intensified green awareness among the students and through green education on the one hand and plans to mitigate carbon emission from vehicles on the other.

The College management has motivated and encouraged all students and staff is to use public transportation, cycle, walking, and further discard use of personal vehicle in order to reduce CO2 emission and fuel consumption and convert the campus into ***Zero Carbon Campus.***

The College has also encouraged green transportation i.e. encourage students and staff to pool car and two wheelers. Discard use of even public transportation and reach walking if the college premise is within 2 to 3 Km radius.

8.2 Parking Facility & Regulations

The College campus has a parking shed for limited vehicles only. This is in order to discourage bringing vehicles on the campus. The parking shed adds to heat island effect roof. The trees are used as shading devise to park vehicles. This also saves the cost of parking shade and

further reduce heat island effect roof. The trees act as evaporative type of cooling system for the campus.

All the vehicles are parked in orderly manner within the campus.

Green Transportation is also the need of the hour considering rapidly depleting oil reservoirs and India is dependent on overseas to meet with its oil demand and in return lose valuable foreign currency reservoir.

Implementation of Green Transportation on the campus can reduce number of vehicles on the campus and also eased down parking issues. The College proposes to prevent movement of vehicles on the campus and erect bicycle stand. Students /staff may visit campus on their vehicle and park it on entry / exit point, pick up the bicycle and move on the campus.

PARKING FACILITY ON THE CAMPUS

7. Energy Efficiency

Energy conservation is the utmost important in Green & Environment Audit. Entire Nation and all States of our country are canvassing and encouraging people of India to save energy. We are falling short of energy as compared to its generation and usage.

Ministry of New and Renewable Energy, Government of India of India is promoting use of Green and Hybrid Energy. Government of India has come up with ECBC code-2005 revised in 2017 with amendment in 2022. All Public buildings, Institutions, Commercial complexes, Factory buildings Residential complexes have to follow ECBC-2017 norms.

College has taken a pro-active step of procuring LED lighting fixtures and BEE star rated electrical equipment and ceiling fans for all its spaces including notification to use the same at the time of replacement and for new construction. This has been done even before the Green & Environment Audit could take place. College has a good practice to purchase and install only LED lighting fixtures and purchase all equipments of BEE star rated.

7.1 Implementation of ECBC/ASHRAE/LPD Norms

The College has yet to undertaken Energy Audit for its campus Building, which should be taken up soon.

Even then College Administration has taken up series of steps to reduce the energy consumption on the campus. College has taken a policy decision to install LED lighting fixtures only and purchase all electric equipment with minimum BEE 3 Star Rating.

The College has further taken a decision to retrofit its buildings as energy efficient / green buildings and construct all its new buildings as energy efficient / green buildings.

The College designs the building to comply with Energy Conservation Building Code (Revised Version May, 2017) (or) ASHRAE Standard 90.1-2010 (without amendments) through one of the following approaches:

Performance based approach (Whole building simulation) OR Prescriptive approach. Energy Efficient Buildings have savings over more than 40% in electric consumption over ECBC norms or ASHRAE norms. The College confirms that the total annual energy consumption of the building should not exceed the total base case energy consumption computed, as per ECBC (or) ASHRAE Standard 90.1-2010.

The Lighting Power Density (LPD) in the building interior, exterior and parking areas are reduced by minimum 10% over ECBC base case.

Compliance for the lighting power density is shown either through 'Building Area Method' or 'Space Function Method'. Exterior areas illuminated by lighting only is considered for lighting power density calculations. The LPD includes power consumption of complete fixture, including lamps and ballasts

COLLEGE GREEN POLICY NOTIFCATION

Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Ref.: No. :GSC/MKM/2022/78 Date: 26/02/2022

CIRCULAR

Subject:- Green Policy of the College

Hon'ble Prime Minister Narendra has made the pledge to cut its emissions to net zero by 2070, the first time India has set a net zero target, at the Glasgow summit during during November, 2021.

The University has formed it's Green Policy in view of the above said pledge by our Hon'ble Prime Minister.

All departments are requested to implement this ***"Green Policy"*** of the college strictly in letter and spirit. The Green Policy of the College is also mandatory form NAAC point of view.

Implementing this Green Policy will not incure an expenditure of single rupee but will set an expample before students, society and staff regarding our concern for the "Climate Change" and Environmental Conscious Life Style. What is needed today is Mindful and Deliberate Utilization, instead of Mindless and Destructive Consumption.

GREEN POLICY OF THE COLLEGE

1. ***Energy Efficiency Measures***
   - (i) Motivate and Encourage "Save Energy" measures on campus by requesting all concerned to switch off lights, fans and Air-Conditioners when room and class room is not occupied.
   - (ii) Place Sinages in each room and class room to "Switch Off" lights, fans and AC when not is use.
   - (iii) Purchase/Replace ceiling fans with BEE 5 star rating.
   - (iv) Purchase/Replace energy efficient lighting fixtures in form of LED
   - (v) Purchase/Replace electrical equipments such as AC, water coolers, refrigerators, microwave, etc with only BEE 5 star rating.
   - (vi) Energy Audit

7.2 Total Energy Consumption & Equivalent CO2 Emission

The data based on electrical bills collected from College reveals that the total Electrical energy units consumed on Campus per month is approx. **15,000** ***(KWh)***. This includes ***air conditioners***, which consumes about ***50%*** of electricity

Hence total annual energy consumption is 15,000 x 12 = 1,80,000 units per annum.

One Unit equals 1000 watts (1KWhr.) It requires 0.538 Kg or approximately ½ Kg of coal to produce 1 unit of electricity.

Total quantity of coal required to produce ***1,80,000*** units of electricity is (1,80,000 x 0.538 Kg coal) = 96,840 Kg or 96.84 tons of coal.

Co_2 emission by coal

One Kilogram of coal emits 2.86 Kg. of CO_2 thereby increasing the carbon footprint which in turn contributes to global warming.

Therefore 96.84 tons of coal consumed indirectly by the College through consumption of 1,80,000 units of electricity led to the emission of (96,840 Kg of coal x 2.86 Kg CO_2) = 2,76,962.4 Kg or **276.96** ***tons of CO_2 the atmosphere.***

7.3 Solar Panels on Grid

The College has installed 45.00 KW solar panels and this has offsets entire energy consumption on the campus.

These Solar panels are connected to Grid through Net Metering and hence the cost of batteries to store solar energy generated is saved. Furthermore, these batteries are harmful to environment.

These solar panels generate 45 Kw per hour, however the panel will function effectively only for about 5 hours per day. Hence total solar energy generated per day will be 45 x 5 = 225 Kw/day

Total solar energy generated per year will be 225 Kw x 365 = 82,125 Kw.

The coal equivalent 82,125 x 0.538 = 44,183.25 Kg. coal.
The CO_2 equivalent is 44,183.25 x 2.86 = 1,26,364.095
1,26,364.095 Kg = 126.36 tons

Hence Co_2 reduction because of proposed solar panels on the campus is 126.36 tons.

Hence the College has contributed towards reduction of 25% emission due to consumption of energy & also contributed towards Zero Emission Policy of Nation.

SOLAR PANELS OF 45 KW ON-GRID i.e. NET METERING

7.4 Energy Efficiency & Conservation

College building has air-conditioners, which confirms and considers unitary air-conditioners with BEE 1-star rating.

College verifies and ensure that the building's equipment & systems are commissioned to achieve performance as envisaged during the design stage. College is also proposing to submit measurement & verification plan for yearly reporting.

All Lighting fixtures are LED. All electrical equipment are minimum BEE 3 Star Rated. All ceiling fans are BEE star rated. Proper signages are placed Save Energy and Put Off lights when not in use.

The College has installed energy efficient pumps. The building design is such so as to attract maximum daylighting, which reduces artificial lighting load during daytime.

The College has placed signages to ***"Save Energy"*** and other similar kind of signages at all class rooms and wash rooms to motivate and create awareness amongst students and staff to save water.

SIGNAGES & ENERGY CONSERVATION

ENERGY EFFICIENT LED LIGHTING FIXTURES & CEILING FANS

ENERGY EFFICIENT SPLIT AC OF BEE 1 STAR RATING & REFRIGATOR OF BEE 5 STAR RATING

7.5 Outdoor Light Pollution Reduction

Light pollution on the campus is reduced to increase night sky access and enhance the nocturnal environment. Exterior lighting are designed such that no external light fixture emits more than 5% of the total initial designed fixture Lumens, at an angle of 90 degrees or higher from nadir (straight down). LED lights are not used for exterior lighting system, which is the improper way of energy efficient steps.

The center-to-center distance between exterior lighting electric poles and their height is calculated so as to avoid any overlap of night light and also to lit only drive way. The bracket and the angle of bracket also play an important role for the same. Finally, the lighting fixture is selected so as to illuminate only drive way.

REDUCE NIGHT LIGHT POLLUTION BY PLACING LED

REDUCE NIGHT LIGHT POLLUTION BY PLACING LED

7.6 Energy Performance Index

Energy performance index (EPI) is total energy consumed in a building over a year divided by total built up area in kWh/sq m/year and is considered as the simplest and most relevant indicator for qualifying a building as energy efficient or not.

EPC ratings are given to properties and are represented on a scale from A (most efficient) to E (least efficient). The EPC contains information about a property's energy use and typical energy costs, as well as recommendations about what you can do to save energy at home and make your property cheaper to run.

Enhance energy efficiency of the building to reduce environmental impacts from excessive energy use

EPI range for buildings having less than 50% occupied area as air conditioned (kWh/m2/year) IS 75-65 for Hot & Dry climate zone. This value is applicable only for day use office buildings which operate for 260 to 300 days in a year.

Electricity consumption details including utility power, captive generation and renewable energy of preceding 1 year

The total annual energy consumption is 1,80,000 kW

The total Built up area is 5,521 sq.mt.

Hence EPI = 1,80,000/5521 = 32.60 kWh/m2/year, which is far below the given limit.

Compliance for the lighting power density is shown either through 'Building Area Method' or 'Space Function Method'. Exterior areas illuminated by lighting only is considered for lighting power density calculations. The LPD includes power consumption of complete fixture, including lamps and ballasts

COLLEGE GREEN POLICY NOTIFCATION

Government Science College, Idar

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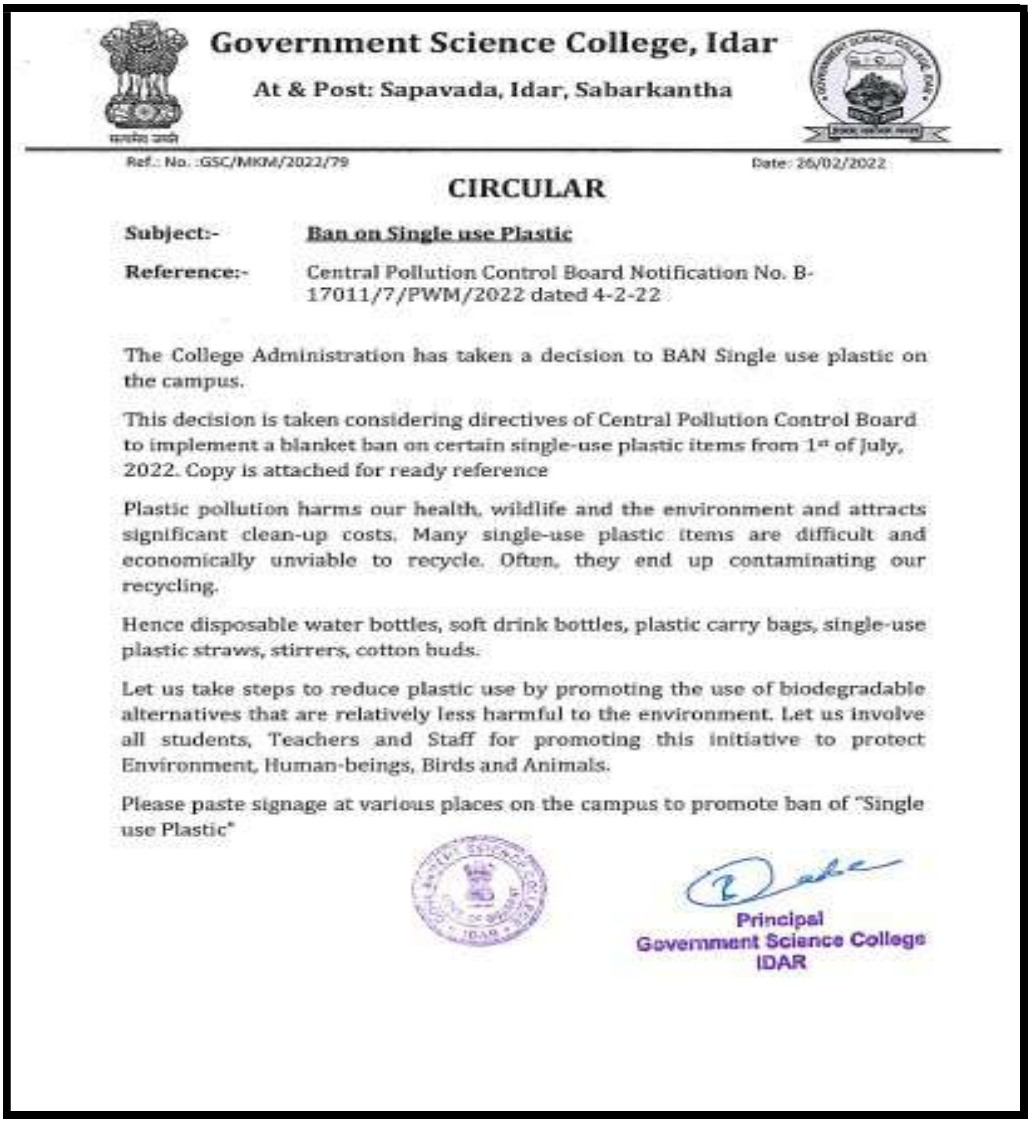
GREEN POLICY OF THE CAMPUS



Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Ref.: No. :GSC/MKM/2022/79 Date: 26/02/2022

CIRCULAR

Subject:- **Ban on Single use Plastic**

Reference:- Central Pollution Control Board Notification No. B-17011/7/PWM/2022 dated 4-2-22

The College Administration has taken a decision to BAN Single use plastic on the campus.

This decision is taken considering directives of Central Pollution Control Board to implement a blanket ban on certain single-use plastic items from 1st of July, 2022. Copy is attached for ready reference

Plastic pollution harms our health, wildlife and the environment and attracts significant clean-up costs. Many single-use plastic items are difficult and economically unviable to recycle. Often, they end up contaminating our recycling.

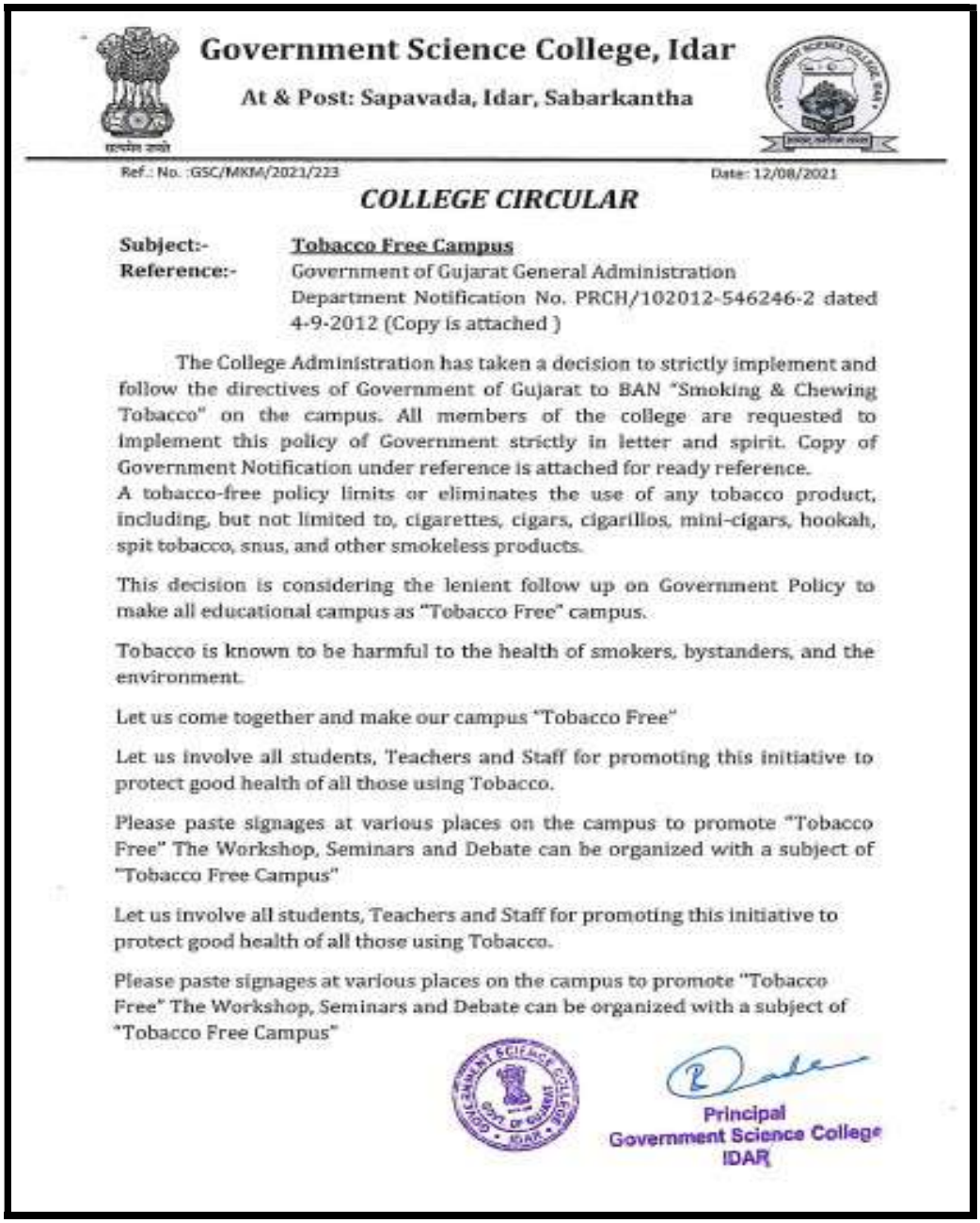
Hence disposable water bottles, soft drink bottles, plastic carry bags, single-use plastic straws, stirrers, cotton buds.

Let us take steps to reduce plastic use by promoting the use of biodegradable alternatives that are relatively less harmful to the environment. Let us involve all students, Teachers and Staff for promoting this initiative to protect Environment, Human-beings, Birds and Animals.

Please paste signage at various places on the campus to promote ban of "Single use Plastic"

Principal
Government Science College
IDAR

BAN ON SINGLE USE PLASTIC CIRCULAR



Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Ref.: No. :GSC/MKM/2021/223 Date: 12/08/2021

COLLEGE CIRCULAR

Subject:- **Tobacco Free Campus**

Reference:- Government of Gujarat General Administration Department Notification No. PRCH/102012-546246-2 dated 4-9-2012 (Copy is attached)

The College Administration has taken a decision to strictly implement and follow the directives of Government of Gujarat to BAN "Smoking & Chewing Tobacco" on the campus. All members of the college are requested to implement this policy of Government strictly in letter and spirit. Copy of Government Notification under reference is attached for ready reference.
A tobacco-free policy limits or eliminates the use of any tobacco product, including, but not limited to, cigarettes, cigars, cigarillos, mini-cigars, hookah, spit tobacco, snus, and other smokeless products.

This decision is considering the lenient follow up on Government Policy to make all educational campus as "Tobacco Free" campus.

Tobacco is known to be harmful to the health of smokers, bystanders, and the environment.

Let us come together and make our campus "Tobacco Free"

Let us involve all students, Teachers and Staff for promoting this initiative to protect good health of all those using Tobacco.

Please paste signages at various places on the campus to promote "Tobacco Free" The Workshop, Seminars and Debate can be organized with a subject of "Tobacco Free Campus"

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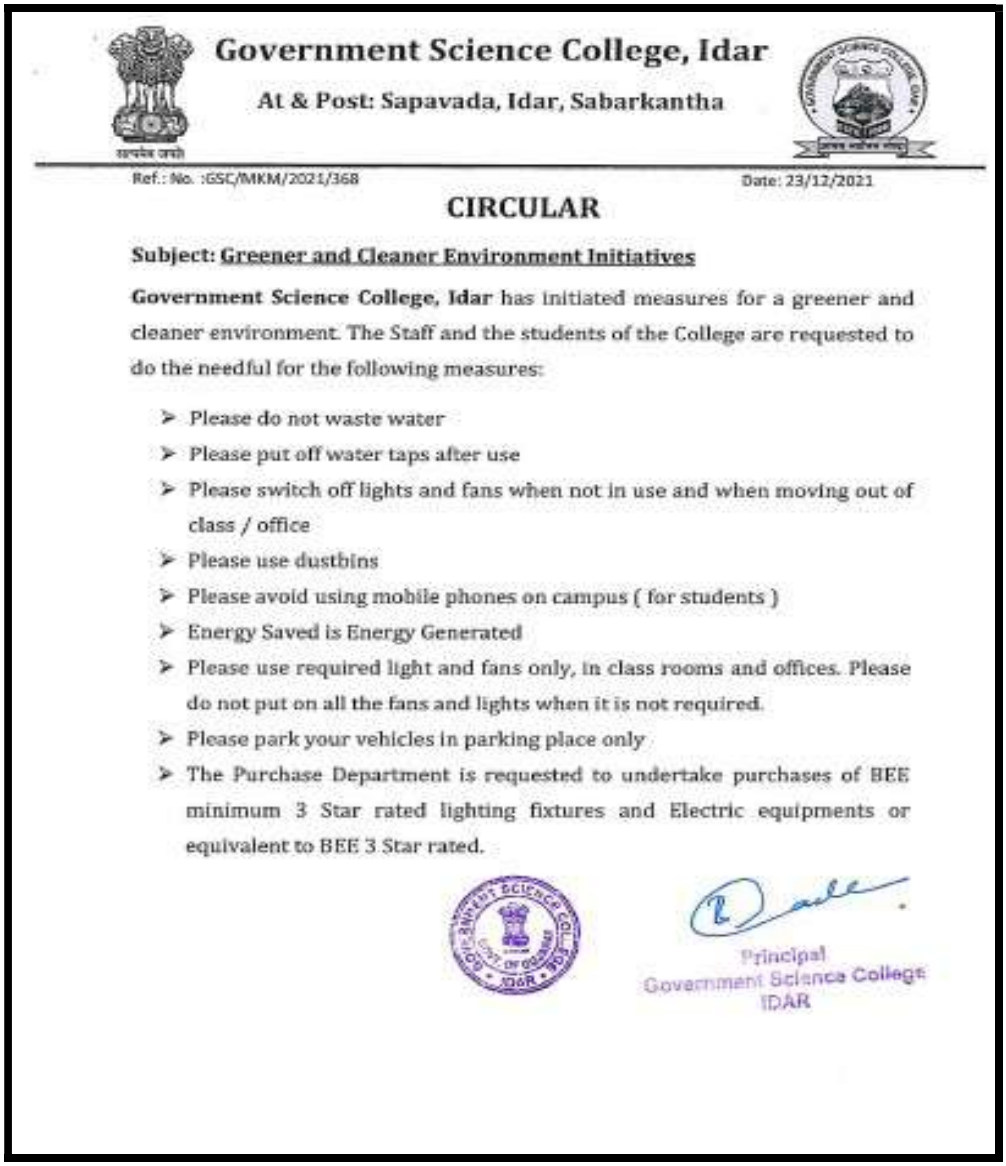
Principal
Government Science College
IDAR

TOBACCO FREE CAMPUS CIRCULAR



Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Ref.: No. :GSC/MKM/2021/368 Date: 23/12/2021

CIRCULAR

Subject: Greener and Cleaner Environment Initiatives

Government Science College, Idar has initiated measures for a greener and cleaner environment. The Staff and the students of the College are requested to do the needful for the following measures:

- Please do not waste water
- Please put off water taps after use
- Please switch off lights and fans when not in use and when moving out of class / office
- Please use dustbins
- Please avoid using mobile phones on campus (for students)
- Energy Saved is Energy Generated
- Please use required light and fans only, in class rooms and offices. Please do not put on all the fans and lights when it is not required.
- Please park your vehicles in parking place only
- The Purchase Department is requested to undertake purchases of BEE minimum 3 Star rated lighting fixtures and Electric equipments or equivalent to BEE 3 Star rated.

Principal
Government Science College
IDAR

GREENER & CLEANER INITIATIVE

Compliance for the lighting power density is shown either through 'Building Area Method' or 'Space Function Method'. Exterior areas illuminated by lighting only is considered for lighting power density calculations. The LPD includes power consumption of complete fixture, including lamps and ballasts

COLLEGE GREEN POLICY NOTIFCATION

Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Ref.: No. :GSC/MKM/2022/78 Date: 26/02/2022

CIRCULAR

Subject:- Green Policy of the College

Hon'ble Prime Minister Narendra has made the pledge to cut its emissions to net zero by 2070, the first time India has set a net zero target, at the Glasgow summit during during November, 2021.

The University has formed it's Green Policy in view of the above said pledge by our Hon'ble Prime Minister.

All departments are requested to implement this ***"Green Policy"*** of the college strictly in letter and spirit. The Green Policy of the College is also mandatory form NAAC point of view.

Implementing this Green Policy will not incure an expenditure of single rupee but will set an expample before students, society and staff regarding our concern for the "Climate Change" and Environmental Conscious Life Style. What is needed today is Mindful and Deliberate Utilization, instead of Mindless and Destructive Consumption.

GREEN POLICY OF THE COLLEGE

1. ***Energy Efficiency Measures***
   - (i) Motivate and Encourage "Save Energy" measures on campus by requesting all concerned to switch off lights, fans and Air-Conditioners when room and class room is not occupied.
   - (ii) Place Sinages in each room and class room to "Switch Off" lights, fans and AC when not is use.
   - (iii) Purchase/Replace ceiling fans with BEE 5 star rating.
   - (iv) Purchase/Replace energy efficient lighting fixtures in form of LED
   - (v) Purchase/Replace electrical equipments such as AC, water coolers, refrigerators, microwave, etc with only BEE 5 star rating.
   - (vi) Energy Audit

Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

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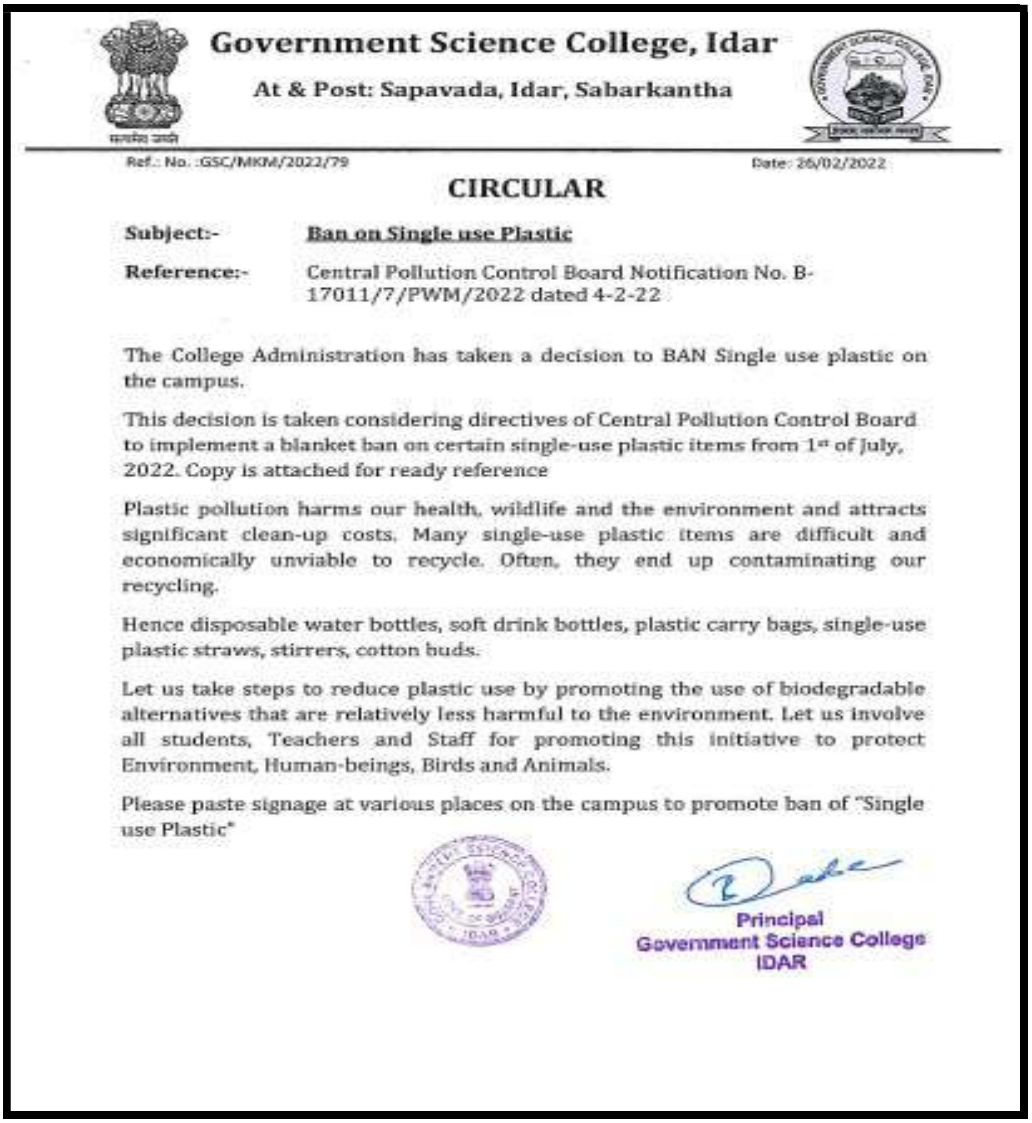
GREEN POLICY OF THE CAMPUS



Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Ref.: No. :GSC/MKM/2022/79 Date: 26/02/2022

CIRCULAR

Subject:- **Ban on Single use Plastic**

Reference:- Central Pollution Control Board Notification No. B-17011/7/PWM/2022 dated 4-2-22

The College Administration has taken a decision to BAN Single use plastic on the campus.

This decision is taken considering directives of Central Pollution Control Board to implement a blanket ban on certain single-use plastic items from 1st of July, 2022. Copy is attached for ready reference

Plastic pollution harms our health, wildlife and the environment and attracts significant clean-up costs. Many single-use plastic items are difficult and economically unviable to recycle. Often, they end up contaminating our recycling.

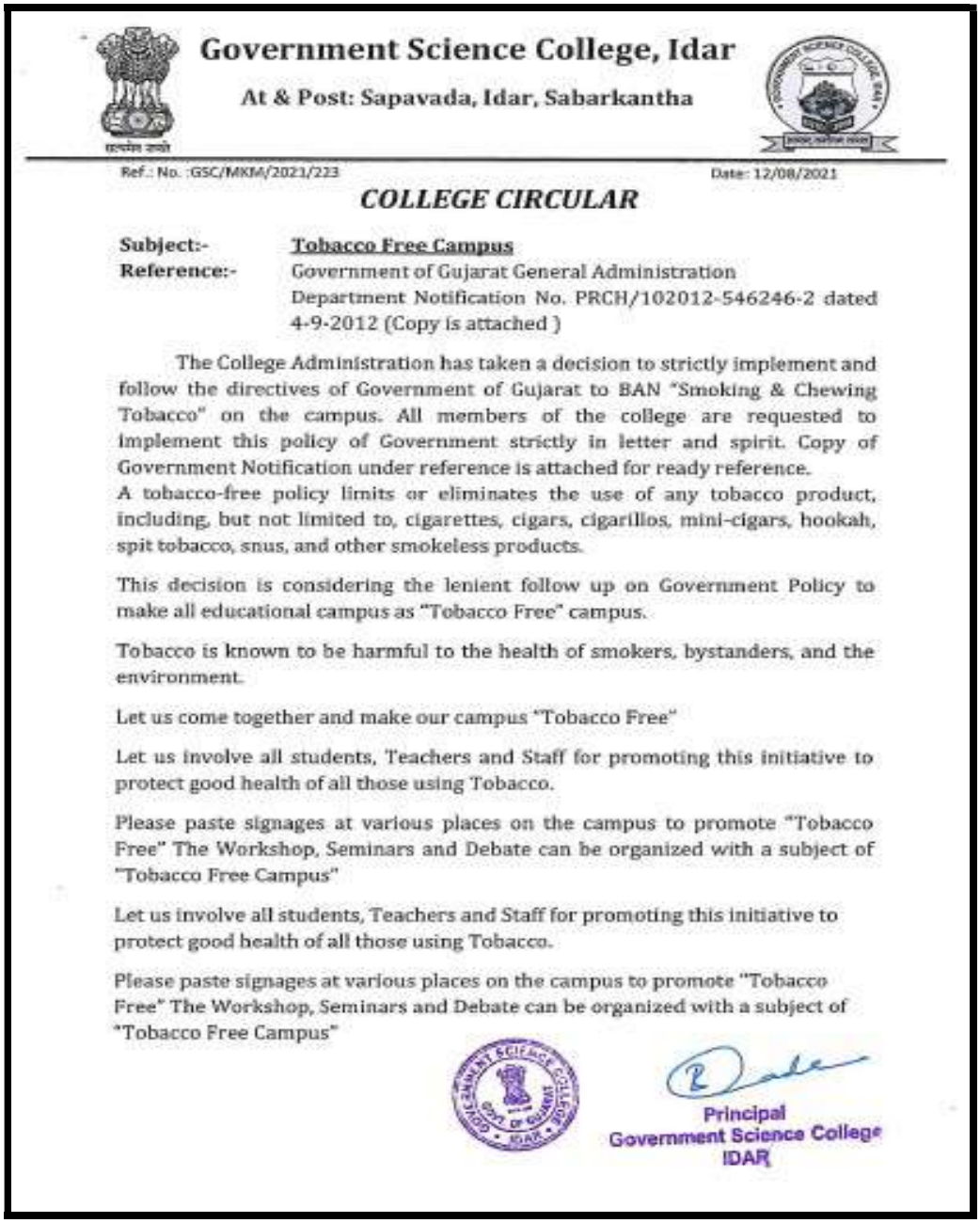
Hence disposable water bottles, soft drink bottles, plastic carry bags, single-use plastic straws, stirrers, cotton buds.

Let us take steps to reduce plastic use by promoting the use of biodegradable alternatives that are relatively less harmful to the environment. Let us involve all students, Teachers and Staff for promoting this initiative to protect Environment, Human-beings, Birds and Animals.

Please paste signage at various places on the campus to promote ban of "Single use Plastic"

Principal
Government Science College
IDAR

BAN ON SINGLE USE PLASTIC CIRCULAR



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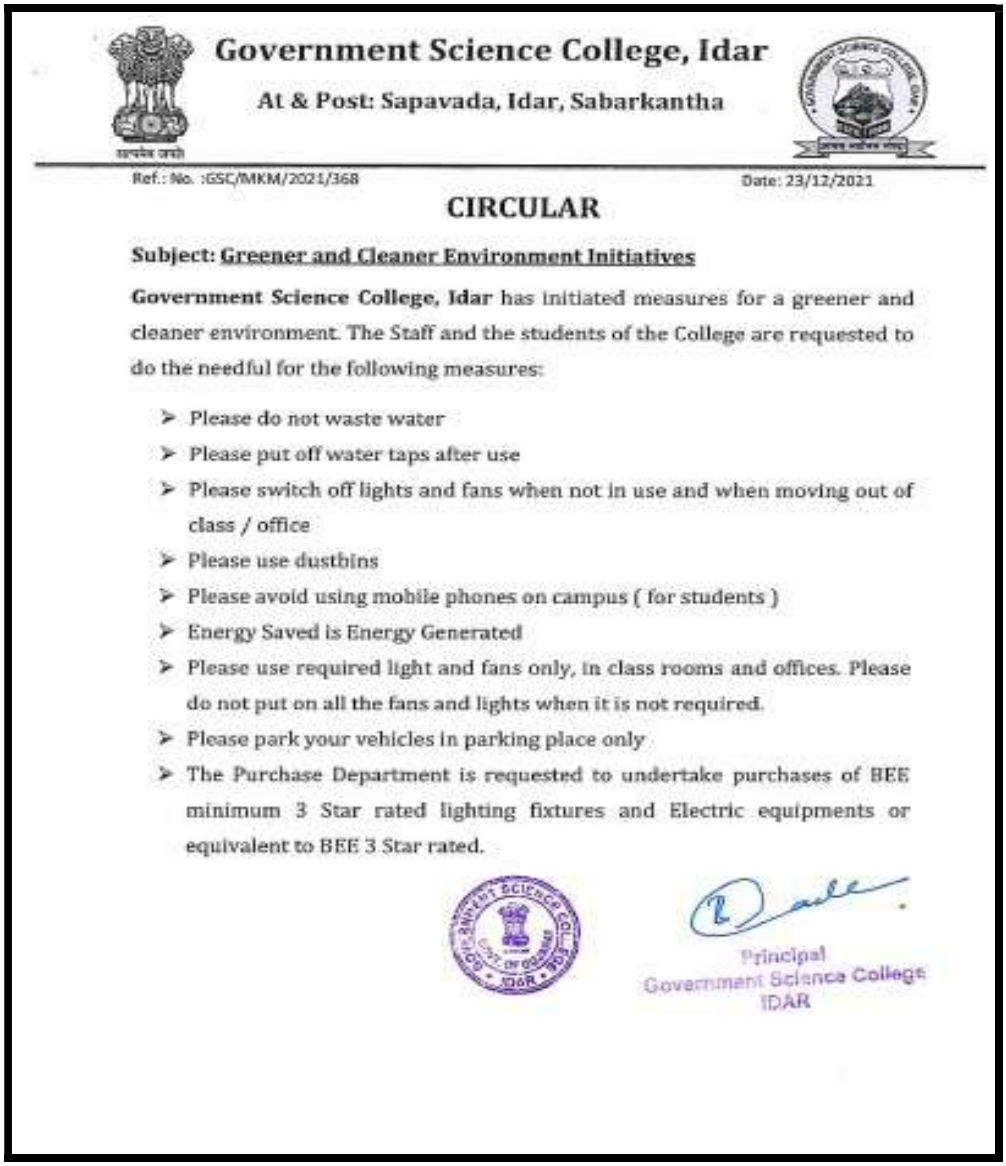

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Principal
Government Science College
IDAR

GREENER & CLEANER INITIATIVE

applicant for the same because all the students are from nearby villages and towns.

SECURITY

The College has a very vigilant and professional security arrangement and all students and staff feel to be in safe hands.

CLEANING CAMPUS ACTIVITIES

The College needs still regulate and strengthen NSS & promote NCC activities on the campus. Most of the NSS activities are part and parcel of Green Initiatives and Criterion VII of NAAC.

TREE PLANTATION UNDER NSS ACTIVITIES

14. Suggestions & Recommendations

There exists vast scope to improve upon the above said for the College with respect to Green campus, Green Initiatives, and Green & Environment Audit of the campus.

1. ***It is recommended to organize Seminars, Conferences and Workshops in the College to make all stakeholders of College aware of the Criterion VII of NAAC regarding Institutional Values & Best Practices, focussing on Green Buildings, Water Audit, Energy Audit, Energy & Water Efficiency, Post Occupancy Waste Management System, Rain Water Harvesting, Indoor Environmental Quality, Green Energy, Carbon Footprint & Handprint, Zero Emission, Net Zero Campus, Water Positive Campus and other Environmental related topics to create awareness amongst the students, staff and people of Gandhinagar City and adjoining areas regarding above said topics. This will help to successfully implement Green Policy on campus. College Administration is also advised to take actions to pass on this message to Students Elected Wing and campaign for the same during the College functions and programmes.***

2. ***The entire exercise of Green & Environment Audit is not only for Academic purpose but it has to be implemented in Letter and Spirit.***

3. ***It is suggested and recommended to the College Administration to replace all old tube lights consuming 55 watts of energy with energy efficient LED lighting fixtures and and replace all old ceiling fans consuming more than 60 watts with BLDC ceiling fans consuming only 24 watts with no capacitor and hence not contributing to equipment heat. It is also recommended to replace all old non-energy efficient unitary air-conditioners with latest BEE 5 star rated air-conditioners, which are energy efficient. All the other electrical appliances used in the College must be minimum BEE 3 Star Rated***

4. ***It is also recommended to place more numbers of signages in each class rooms and wash rooms requesting to put off lights, fans and exhaust fans when not in use. Signage to Save energy, Save Water, Waste collection, No Smoking, Anti-Ragging, No Tobacco, etc. has also to be placed in more numbers. College Management has placed signages in this regard but more signages are to be placed to make the policy more effective and convey the message to each and every student at each and every corner of the College campus.***

5. ***There can be one master switch in all class rooms connecting all lights and fans so as to have proper control over the operation of all lighting fixtures and fans.***

6. ***Motion sensors can be installed in wash room areas and lobbies to prevent wastage of energy.***

7. ***College also to prepare post-occupancy survey to verify occupant comfort (lighting levels, temperature, relative humidity, noise levels, etc.,). Report on building performance of the equipment & systems listed. The report for each of the equipment & systems covers the following:***

   - ***Equipment specifications***
   - ***Test results with specific comments.***
   - ***Key monitoring aspects to sustain performance***
   - ***Estimated energy & water consumption***
   - ***Scope for performance enhancing in future, and savings thereof***

8. ***It is suggested to arrange a talk on Green Transportation wherein students and staff are educated for adopting Green Transportation and also save money and preserve their health. The figures clearly show that the bicycles are hardly used by students and staff. The college need to encourage and motivate students and staff to use bicycles or walk down if the distance is small.***

9. ***Students and staff are to be further informed and motivated to use battery operated two wheelers, which will reduce CO2 emission and also save fossil fuel. It is***

further recommended to provide battery charging facility i.e electric plug points in parking place.

10. College to provide preferred parking for two and 4 wheelers if they enter in pooling or using E-vehicle.

11. The College has to install water efficient plumbing fixtures to enhance water use efficiency and minimise the use of potable water on campus. The plumbing fixtures must meet the baseline criteria, individually or in aggregate. The total annual water consumption of the campus can be controlled and not to exceed the total base case water consumption computed. The base case is considered as per NBC/IGBC/GRIHA

Baseline Flow Rates / Capacity as per Uniform Plumbing Code of India (UPCI)

Fixture Type	Maximum Flow Rate / Capacity	Duration	Daily Uses per Person/ Day
Water Closets	6 LPF (High flush)	1 Flush	1
	3 LPF (Low flush)	1 Flush	1
Health Faucet/ Bidet, Hand-held spray*	6 LPM	15 Seconds	1
Faucet/ taps*	6 LPM	15 Seconds	8
Kitchen Sink*	6 LPM	15 Seconds	6
Urinal*	4 LPF	1 flush	2
Showerhead* / Hand-held Spray*	10 LPM	8 Minutes	1

Source: Uniform Plumbing Code – India, 2016 ** At a design pressure of 4 bar*

12. It is suggested to undertake landscape design to ensure minimum water consumption. College has a large open space but not properly developed. A detailed landscape plan has to be prepared with Green mapping. Landscape area to be planted with drought tolerant/native/adaptive species. The landscape here refers to soft landscaping, which includes only pervious vegetation and landscape shall not be designed with monoculture plant species, since such species would not promote habitat and biodiversity.

13. When college is undergoing Green & Environment Audit then the management must install proper water efficient irrigation facility in form of sprinklers, shut off valves, moisture sensors, drip irrigation, root zone system etc. Use of organic manure will lead to mucus and increase in void ratio with increase in water carrying capacity of soil

14. The college may undertake Green Mapping so that College is able to know the exact quantum of Green treasure within in form of trees, bushes, creepers and landscape. College can also plan for future planting of saplings so that the open space can be properly utilized.

15. It is further suggested to install water meter to improve water performance of the building, and thereby save potable water. Presently there is no water meter installed to calculate the consumption of water for irrigation, flushing, potable and other usages. Hence it is proposed to install water meter to know the actual consumption of water in a building. It is proposed to ensure continuous monitoring of water consumption, both on supply and demand side, to identify improvement opportunities in potable water efficiency.

16. The TDS in ground water can be improved by careful Ground water recharge strategies. College has already made arrangements for Ground water recharge. But this ground water recharge system is not in proper shape and has to be maintained properly for proper and effective functioning of the system. Let this entire system be a Case Study not only for college but this region. Let students and teachers from various colleges/schools and public at large visit this rain water recharge system and implement at their places. We need to market our expertise.

17. College is advised to undertake detailed Water audit exercise. National water policy has also insisted to undertake water audit, which is the

first step towards water efficiency and water conservation so that concrete and perfect measures can be taken for water conservation and efficiency. Even Reduce, Recharge and Reuse strategies in field of water can be further strengthen on campus and better implemented and the College campus can move towards zero discharge campus from stormwater point of view.

18. College to undertake detailed Energy Audit so that perfect measures can be taken for energy conservation and efficiency. College to implement ECBC and ASHRAE norms strictly and even install movement sensors and daylighting sensors for better energy efficiency. Even College may undertake exercise daylighting simulation for designing weather sheds, projections, pargolas etc.

19. College is must improve Post occupancy waste management system. Dustbins to be placed in college building corridors to collect various kind of waste such as paper water, glass waste, organic waste etc. Then mark a place on campus to collect all this waste separately and then send it to recyclable industry. Organic waste in form of landscape waste and kitchen waste to be treated through composting. This will result in organic

manure for landscape. It can be further improved upon and focus on earnings from the waste.

20. College may Retrofit existing building into Green Building. It will be desirable to get Green Building Certification from IGBC/GRIHA or USGBC under Existing Green Building Certification. The certification process will make sure that all the buildings of the College buildings under takes all eoc-friendly measures strictly as per the guidelines of Green Buildings and let the building become model where others may visit the building to study the measures adopted to make it a Green/ Energy Efficient Building

21. The College also needs to have separate preferred parking space near ramp at main entrance for Divyangs.

22. College may explore the possibility for installation of one large Bio-gas and Bio-mass plants. College has a large potential for the raw material of both these plants.

23. Environment Education may be imparted to all the students thorough 1-hr life-skill classes once a week. This will create wide-level environment consciousness among the student community. They will be sensitized to encourage pillion riding

with their peers or use public transport instead of two wheelers. Moreover, they will also motivate their parents, colleagues and relatives for water and energy efficiency approach.

24. *College may Prepare questionnaire related to the environment and then place it before the staff and students to assess their understanding of environment –related issues.*

The questions can be focused on four concerns:

- *Whether they consider themselves eco-conscious?*
- *Do they consider the Institution to be eco-friendly?*
- *What do they think are the top priorities that should be tackled to improve the green campus status of the College?*
- *Whether the students and teachers who own vehicles are aware of the quantity of CO2 emission by their vehicles?*
- *What do they think to save water and electricity on campus?*

25. *Students who own two wheelers / four wheelers are to be sensitized of the carbon emission by their vehicles and educate them on this regard. They are also to be motivated to share their vehicles on*

alternative days with their peers. For example, 50 % of the students who own two wheelers are to be advised to share their ride with their fellow students/neighbours. Thus, the carbon emission can be reduced by 50 % in the coming years. Students to be use bicycle or walk down if the house is nearby.

26. Finally, College may form a Cell to facilitate Other Colleges / Universities for Green & Environment Audit. This would help College to know strength and innovative ideas of other Colleges and would also make it popular for extending this helping hand.

27. The college has to involve students more in NSS & NCC activities and most of the activities of NSS are part and parcel of of Green Initiatives and Ec-friendly development

ABOUT COLLEGE MOTTO, VISION & MISSION

Motto:

The motto "ज्ञानम सर्वोत्तम संपदा" or "Knowledge is the greatest wealth" means that knowledge is an invaluable asset in terms of intellectual development surpassing physical or monetary wealth in importance and utility. This perspective encourages lifelong learning and values intellectual and personal growth as the ultimate forms of wealth and the society at by and large.

Vision:

To strive for excellence in education, the college envisions to impart value based knowledge, nurturing professional skills in the areas of Science, to create sensitivity for the underprivileged in the rural area sustaining the environment, to implement the initiatives of the government for employment and promotion of research.

Mission:

- To inculcate moral values and reverence for constitutional values with a sense of nationalism preserving the glorious heritage of the Nation to make better citizens for tomorrow.
- To provide access to excellence in academics and scientific research to all strata of society with special attention to underprivileged and personal attention to differently-able students.
- To promote academic exchange and academia-industry interfacing, taking advantage of the latest technology.
- To build up young men and women of proficiency, perseverance, principles and philanthropy.
- To create opportunities for self-learning, employabdity, entrepreneurial capacities, creativity, Start Up and innovation by implementing various initiatives of the Government.
- To encourage students for gender sensitivity and equality. To foster an experience of urban and rural extension work so that students are inspired to look for better opportunities for all.

To disseminate the concern for environmental and ecological protection as well as sustainable development.Vision

To strive for excellence in education, the college envisions to impart value based knowledge, nurturing

IGBC

Confederation of Indian Industry

Membership Certificate

This is to certify that

Universal Consultancy

is an Annual Member of Indian Green Building Council (IGBC)

Bearing Membership No ***IGBCCS142479***

This certificate shall be valid up to December 2024

K S Venkatagiri
Executive Director
CII - IGBC

Gurmit Singh Arora
Chairman
Indian Green Building Council

B Thiagarajan
Vice Chairman
Indian Green Building Council

Indian Green Building Council
CII - Sohrabji Godrej Green Business Centre, Survey No. 64, Near Hitech City, R R Dist, Hyderabad - 500 084
T: +91 40 4418 5132 / 33 F: +91 40 4418 5189 E: igbc@cii.in W: igbc.in

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC)

Certificate of Excellence

This certificate of appreciation is issued appreciating outstanding and dedicated performance for facilitating National Assessment and Accreditation Council (NAAC) Office for Green Building Certificate under IGBC Green Existing Buildings O&M Rating System with Platinum Rating, which has a recognition of Global Leadership

N. K. OJHA

In recognition of your continuing excellence in green building awarded on 19th September 2022

S. C. Sharma

PROF. S. C. SHARMA
DIRECTOR, NAAC

19TH SEPTEMBER 2022

Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Email: sciencecollegeidar@gmail.com

Website: www.gscidar.edu.in

Notice

To inform the students studying in this institute that Village Cleanliness activities are organized on dt: 16.01.2020 for environment awareness and green campus initiative for which the coordinator of the program Dr. Jignesh Dalvadi has to be contacted.

સપ્તધારા કો-ઓર્ડીનેટર
સરકારી વિજ્ઞાન કોલેજ, ઇડર

Principal
Government Science College
IDAR

Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Email: sciencecollegeidar@gmail.com

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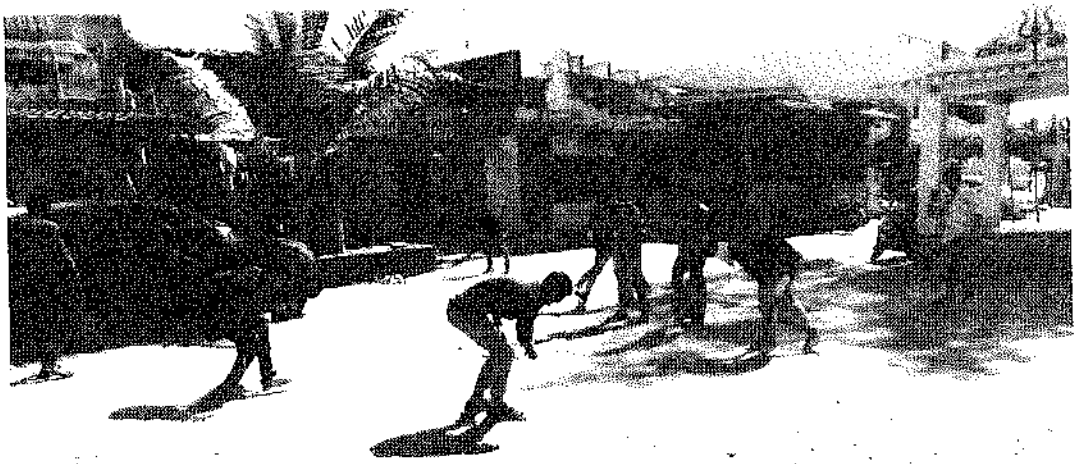
Report

Village Cleanliness

Clean Village, Green Village: A College Initiative" on this title to promote cleanliness, hygiene, and environmental awareness in rural areas, improving the overall quality of life. The cleanliness campaign has made by college in Laloda on 16.01.2020 in which 21 College students organized a cleanliness drive, covering streets, public spaces, and water bodies. The cleanliness campaign has made a tangible impact in the village, promoting a cleaner, healthier, and more sustainable environment. We aim to continue this effort, empowering rural communities to take ownership of their surroundings.

સપ્તધારા કો-ઓર્ડીનેટર
સરકારી વિજ્ઞાન કોલેજ, ઇડર

Principal
Government Science College
IDAR



Village Clenliness

સપ્તધારા કો–ઓર્ડીનેટર
સરકારી વિજ્ઞાન કોલેજ, ઇડર

Principal
Government Science College
IDAR

GOVERNMENT SCIENCE COLLEGE, IDAR			DATE
	VILLAGE CLEANING : 2019-20		16/01/2020
No	NAME	M/F	SIGM
1	BALEVA JAYDIP	M	Jaydip
2	BARANDA RAVINABEN	F	રવિના
3	CHENVA ANUPAKUMARI	F	Anup
4	CHENVA ANKITABEN	F	Ankita A. chenva
5	DAMOR MAYANKKUMAR	M	D. Mayank
6	DANTROLIYA KANIJFATAMA	F	Kanij.
7	TANVIKUMARI RAMESHKUMAR HINDUSTANI	F	
8	TEJALBEN VINODBHAI VANKAR	F	Tejal
9	UMABEN BAKULCHANDRA KALASAVA	F	UMA
10	AVANI VINOD PATEL	F	Avani. V. Patel
11	BHUMIKABEN VINUJI THAKOR	F	
12	CHETNABEN ARVINDBHAI KHARADI	F	C. A. K.
13	DARSHANKUMAR SURESHBHAI PATEL	M	DARSHAN
14	DIVYABEN VASANTBHAI PATEL	F	D.V.P.
15	FANCY VINODBHAI PATEL	F	F. V. Patel
16	GITABEN NANJIBHAI FERA	F	Gita N. Fera
17	GOVINDBHAI ANDABHAI RABARI	M	GOVIND
18	KRUPALI HASMUKHBHAI PRAJAPATI	F	Krupa
19	KSHAMA DIPAKBHAI PATEL	M	K.D.P.
20	MANSIBEN SURENDRABHAI CHAUDHARY	F	
21	NEHABEN MUKESHBHAI PATEL	F	

સપ્તધારા કો-ઓર્ડિનેટર
સરકારી વિજ્ઞાન કોલેજ, ઇડર

GOVERNMENT SCIENCE COLLEGE GOVT. OF GUJARAT IDAR

Principal
Government Science College
IDAR

Government Science College, Idar

At & Post: Sapavada, Idar, Sabarkantha

Email: sciencecollegeidar@gmail.com

Website: www.gscidar.edu.in

Notice

To inform the students studying in this institute that Shreemad Rajchandra – Vihar Cleanliness activities are organized on dt: 24.01.2020 for environment awareness and green campus initiative for which the coordinator of the program Dr. Jignesh Dalvadi has to be contacted.

સપ્તધારા કો-ઓર્ડીનેટર
સરકારી વિજ્ઞાન કોલેજ, ઇડર

Principal
Government Science College
IDAR

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Report

Shreemad Rajchandra Vihar Cleanliness

To promote cleanliness and community service among college students, College organized a cleanliness drive at Shreemad Rajchandra Vihar, a sacred pilgrimage site on 24.01.2020. Total 35 Students removed trash, cleaned premises, and restored the site's serenity. It encouraged teamwork, social responsibility, and environmental awareness. The cleanliness drive at Shreemad Rajchandra Vihar was a resounding success, demonstrating the power of collective action in promoting cleanliness and community service.

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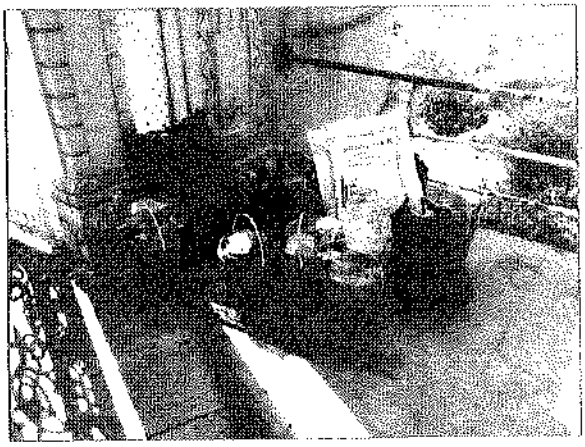

Shreemad Rajchandra Vihar Cleanliness

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GOVERNMENT SCIENCE COLLEGE, IDAR		DATE 24/11/2020	
	SHRIMAD RAJ CHANDRA VIHAR : 2019-20		
No	NAME	M/F	SIGM
1	AMIT RAMESHBHAI PATEL	M	Amit. R Pa
2	ANIKETKUMAR POPATBHAI PATEL	M	Ankit Patel
3	ANJALIBEN ASHVINBHAI PATEL	F	A.A. Patel
4	APEKSHABEN PARESHBHAI CHAUDHARY	F	Apeksha
5	ARCHANABEN GANESHBHAI CHAUDHARI	F	[illegible]
6	ARTIBEN PRAKASHBHAI PRAJAPATI	F	A.P.
7	BHARGAVIBEN MAGANBHAI MODIYA	F	Bhargav.
8	BHARGAVKUMAR SURESHBHAI PATEL	M	B. P.
9	BHAUTIKKUMAR NAVINBHAI PATEL	M	Patel Bhautik. N
10	BHAVESHBHAI JITUBHAI DAMOR	M	[illegible]
11	BHAVIK JETHALAL VANKAR	M	B. J. V
12	CHIRAGBHAI ROHITBHAI BUMBADIYA	M	[illegible]
13	CHIRAGKUMAR JASUBHAI CHAUDHARY	M	Chirag J. Chaudh
14	DARSH GOVINDBHAI PATEL	M	Darsh
15	DARSHIL RAMESHBHAI CHAUHAN	M	D.R. Chauhan
16	DHARABEN RAJENDRASINH PADHIYAR	F	D.R.P.
17	DHARMENDRA PRAKASHCHANDRA THAKARDA	M	D.P. Thakarda
18	DHAVALKUMAR RAMANBHAI KALASVA	M	D. R. K.
19	DIXITBHAI BHARATBHAI PRAJAPATI	M	Dixit.
20	DIXITKUMAR YASHAVANTKUMAR PATEL	M	Dixit
21	DIYABEN RAJUBHAI PATEL	M	[illegible]
22	GAUTAMKUMAR PRABHUDAS CHAUHAN	F	[illegible]
23	HANI YASHVANTBHAI PATEL	M	H. Y. Patel
24	HANYBEN DINESHBHAI CHAUDHARI	F	Hany
25	HARDIKSINH DALJITSINH BHATI	M	Hardik. Bhati
26	HARESHKUMAR KANTIBHAI SAGAR	M	Bhatti
27	VARSHABEN AMRUTBHAI SOLANKI	M	V. Solanki
28	DIVYABEN BHUPATSINH RAHEVAR	F	D. B. R.
29	JAYRAJSINH MAHENDRASINH CHAMPAVAT	M	Jayraj
30	KHUSHI LALITBHAI PATEL	F	[illegible]
31	LAXMANBHAI KARNAJI KALAR	M	K. L. Patel
32	MAHAMMADAKBAR GULAMABBAS MASI	M	M. G. Masi.
33	MAHESHKUMAR AMRUTBHAI BHAGORA	M	[illegible]
34	MEETKUMAR SURESHBHAI PRAJAPATI	M	M. S. P
35	ANJUMANBANU GANIMAHAMMAD MEMON	F	A. G. M

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Medicinal Plant distribution at nearby community

GOVT. SCIENCE COLLEGE IDAR GOVT. OF GUJARAT

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Idar(S.K.)

Plantation at Laloda village