

Shetkari Shikshan Sanstha's



## **ARTS, COMMERCE & SCIENCE COLLEGE, MAREGAON (ROAD)**

Dist. Yavatmal- 445 303 (M.S.) India

Affiliated to Sant Gadge Baba Amravati University, Amravati

NAAC Accredited at 'B+' grade with CGPA 2.51 (Cycle-I)

### **7.1.2 The Institution has facilities and initiatives for**

- 1. Alternate sources of energy and energy conservation measures**
- 2. Management of the various types of degradable and nondegradable waste**
- 3. Water conservation**
- 4. Green campus initiatives**
- 5. Disabled-friendly, barrier free environment**

### **1. Alternate Sources of energy and energy conservation measures**

#### **Energy efficient Equipment's:**

We have some old electric equipment which consumes more energy compare to latest equipment's. We are currently using LED to save energy. Our infrastructure up gradation is in process and we are focusing to purchase energy efficient instruments only to avoid extra energy consumption.

#### **Electricity:**

Common electricity meter is provided for the entire campus having consumer number 37014403101. Electricity for or institute is provided Maharashtra State Electricity Distribution Co. Ltd. (MAHAVITARAN)

Electricity bills from April 2021 to March 2022 were available for review (approximately average consumption 520 units/ month).

Latest bill we paid for the month of March 2022 was of rupees 4620. This bill amount was increased in last six months compare to earlier six months due to ongoing construction work of our institute.

The areas of major consumption of electricity are:

Ceiling fans, Computers (desktops & laptops), 2 Projectors, 1 Water purifiers, tube lights, LEDs & fans are installed in classrooms, laboratories and library. For efficient energy consumption and saving on electric bill, College has initiated the process of replacing incandescent bulbs and tube lights with LEDs. College has 2 air coolers. An Uninterruptible Power Supply (UPS) system is provided in examination Department & Library for computers and servers. The UPS system is typically used to protect hardware viz. computers, data

centers, telecommunication equipment or other electrical equipment when an unexpected power disruption could cause serious work disruption or data loss. Reflectors are not provided for lights in the library and auditorium. Reflectors can reduce the number of lights required and hence electricity consumption. All computers have LED screens; computers are shut down by turning off the main switch when not in use. Common switches are provided for some tube-lights & fans. To avoid wastage of energy due to common area illumination, it is recommended to have separate switches. Tube-lights and fans are switched off by students and staff when not in use. Instructions regarding switching off the electrical appliance were seen in laboratory notice boards. However, signage are 10 Confidential Document not provided near electrical switch boards. Signage can encourage & help users to switch off lights and fans to save electricity. LPG cylinders are used mainly in canteen kitchen for cooking and in chemistry, botany, zoology and biochemistry, Home-Economics laboratories. A cylinder of 19 kg generates 881.6 MJ (Mega Joules) of energy. Storage facility for LPG cylinder is located on ground floor. All the commercial LPG gas cylinders were in vertical position with access control.

### **Solar Water Heating System:**

We are planning to install on grid Rooftop Solar PV System of 75 KWH capacities. Solar panels cleaning will be done by College's maintenance team and the system will be maintained by the company whom we provide contract accordingly. Our Solar panels facility will exports around 1000 units per month to the western Grid of the country.

### **Distributed Power Generation:**

Our college has a diesel generator (DG) of capacity 100 KVA. DG set is used only in case of emergency when there is power cut-off. Power cut off ratio is very less in our area so we use DG very rarely and therefore DG emissions are not monitored. We use inverter battery power backup for computers in case of Power Cut Off to avoid pollution occurred by Diesel Generator.

### **Currently Consumption of Electricity for Session 2021-22:**

Currently we are consuming electricity 1477 Watts / month. This is approximately consumption of electricity for this academic year. Observed variation of electric consumption is due to ongoing building construction work in college.

Sr No. A	Room No./ Lab B	Name of Ele Equipment C	Ele Consumption D	Total Eqp. E	Total Watts F=D*E	Use/ Hours/ Instrument G	kWh/ Day/ Instrument H=F*G/1000	(kWh/Month) Total Consum. I=H*26Days
1	Chemistry	Fan	55 Watts	4	220	5	1.1	29 Watts
		Tubelight	10 Watts	3	30	5	0.15	4 Watts

		Oven	1000 Watts	1	1000	1	1	26 Watts
2	Botany	Fan	55 Watts	4	220	5	1.1	29 Watts
		Tubelight	10 Watts	3	30	5	0.15	4 Watts
		Autoclave	1000 Watts	1	1000	3	3	78 Watts
		Centrifuge Machine	120 Watts	1	120	1	0.12	3 Watts
		Weighing Balance	10 Watts	1	10	1	0.01	0 Watts
		Projector	50 Watts	1	50	3	0.15	4 Watts
3	Zoology	Fan	55 Watts	5	275	5	1.375	36 Watts
		Tubelight	10 Watts	4	40	5	0.2	5 Watts
		Oven	1000 Watts	1	1000	1	1	26 Watts
4	Physics	Fan	55 Watts	6	330	5	1.65	43 Watts
		Tubelight	10 Watts	5	50	5	0.25	7 Watts
		Ele Instruments		62	0		0	0 Watts
5	Computer Lab	Desktop	100 Watts	15	1500	5	7.5	195 Watts
		Fan	55 Watts	2	110	5	0.55	14 Watts
		Tubelight	10 Watts	2	20	5	0.1	3 Watts
6	Exam Dept.	Fan	55 Watts	4	220	5	1.1	29 Watts
		Tubelight	10 Watts	4	40	5	0.2	5 Watts
		Desktop	100 Watts	2	200	3	0.6	16 Watts
		Printer	50 Watts	2	100	2	0.2	5 Watts
		Water Filter	50 Watts	1	50	5	0.25	7 Watts
		Water Cooler	50 Watts	1	50	5	0.25	7 Watts
		Inverter	15 Watts	1	15	24	0.36	9 Watts
		LCD (TV)	70 Watts	1	70	5	0.35	9 Watts
		CCTV Unit	50 Watts	2	100	24	2.4	62 Watts
7	Commerce Practicle Lab	Projector	50 Watts	1	50	1	0.05	1 Watts
		Desktop	100 Watts	12	1200	4	4.8	125 Watts
		Printer	50 Watts	2	100	2	0.2	5 Watts
		UPS	10 Watts	2	20	10	0.2	5 Watts
		Fan	55 Watts	2	110	5	0.55	14 Watts
		Tubelight	10 Watts	5	50	5	0.25	7 Watts
8		Fan	55 Watts	4	220	5	1.1	29 Watts

	Principal's Cabin	Tubelight	10 Watts	2	20	5	0.1	3 Watts
		Inverter	15 Watts	1	15	24	0.36	9 Watts
9	Non-Teaching Office	Fan	55 Watts	8	440	5	2.2	57 Watts
		Tubelight	10 Watts	6	60	5	0.3	8 Watts
		Cooler	250 Watts	1	250	5	1.25	33 Watts
		Desktop	100 Watts	5	500	4	2	52 Watts
		Printer	50 Watts	4	200	3	0.6	16 Watts
		UPS	10 Watts	2	20	5	0.1	3 Watts
		Internet Modem		1	0		0	0 Watts
		Sanitizer Machine		1	0		0	0 Watts
		Bell		1	0		0	0 Watts
10	YCMOU Office	Fan	55 Watts	2	110	5	0.55	14 Watts
		Tubelight	10 Watts	3	30	5	0.15	4 Watts
		Desktop	100 Watts	2	200	4	0.8	21 Watts
		Printer	50 Watts	2	100	2	0.2	5 Watts
		Photocopy Machine	80 Watts	1	80	1	0.08	2 Watts
		UPS	10 Watts	2	20	5	0.1	3 Watts
11	Home Economics	Cooler	250 Watts	1	250	5	1.25	33 Watts
		Fan	55 Watts	1	55	5	0.275	7 Watts
		Tubelight	10 Watts	1	10	5	0.05	1 Watts
		Exhaust Fan	35 Watts	1	35	4	0.14	4 Watts
		Fridge-Godrej 165L	150 Watts	1	150	24	3.6	94 Watts
		Microwave LG	800 Watts	1	800	2	1.6	42 Watts
		Mixer	500 Watts	2	1000	1	1	26 Watts
12	Class Rooms (10)	Fan	55 Watts	2	110	5	0.55	14 Watts
		Tubelight	10 Watts	3	30	5	0.15	4 Watts
13	Washrooms (5)	Tubelight	10 Watts	5	50	5	0.25	7 Watts
14	Campus	CFL	10 Watts	10	100	6	0.6	16 Watts
15	Water	Pump	800 Watts	1	800	5	4	104 Watts
16	Ph.D.Cell	Tubelight	10 Watts	2	20	5	0.1	3 Watts
		Fan	55 Watts	2	110	5	0.55	14 Watts
		Desktop	100 Watts	4	400	4	1.6	42 Watts
		Printer	50 Watts	1	50	1	0.05	1 Watts
	TOTAL			249	14615	340	56.82	1477 Watts

The college uses a total of three portable inverter batteries, one of which is used in the principal's office, one in the IQAC room and the library. One is used wherever it is needed like Examination room, cultural events, seminar rooms, sports events, laboratory etc. Livguard Company CPU model LGS 1700 is used and 2 batteries of Autobat turbo power (TPJ), 12 V, 150 Ah with Japanese technology battery capacity on high switch selection and 2 KVA energy.



Luminous Company CPU model Cruze 3.5 KVA, input rated voltage 230 V AC, Rated current 16 .5 Amps, frequency 50 Hz, with 4 batteries of Autobat AB power tubular stationary batteries with Japanese technology (ABT – 2000) 12 V, 200 Ah battery capacity on high switch selection and 3.5 KVA energy.





Livguard Company CPU model LIVGUARD HUPS SW LG3500/48V with input – related voltage: 220 VAC, Related current 23.5 Amps, frequency: 50 Hz, I phase, Output – related voltage: 220 VAC, related current: 16.0 Amps, Frequency:  $50 \pm 0.5$  Hz, I phase, Capacity: 3500 VA/ 2900Watt, operating temperature 0 – 45° C, DC Bus rating 48 VDC/ 68 Amps is used and 4 batteries of Liv Huard energy unlimited are used which is 160 Ah battery capacity on high switch selection and 3.5 KVA energy.



## 2. Management of the various types of degradable and nondegradable waste

**Waste Segregation:** The college has clearly labelled bins for different types of waste, such as recyclables, non-recyclables, organic waste, and hazardous waste. The students, staff, and faculty are educated about the importance of segregation and the proper placement of waste in designated bins.

**Recycling Programs:** The college collected paper, plastic, glass, and metal and collaborate with local waste management agencies and recycling centres to ensure collected recyclables are properly processed.

**Composting:** The college has a composting system for organic waste in botanical garden. Also provide compost bins. The resulting compost used for landscaping or gardening on campus.

**E-waste Management:** The college has electronic waste (e-waste) facility. The e-waste generated by the college, including outdated computers, printers, and other electronic devices handover to certified e-waste recycling companies to ensure proper disposal and recycling of these items, reducing the environmental impact.

**Hazardous Waste Disposal:** The college has hazardous waste facility, such as chemicals, batteries, fluorescent bulbs, and other potentially harmful substances. We follow local regulations and guidelines for the proper storage, labelling, and disposal of hazardous waste.

**Reduce and Reuse:** The college encourage the students and staff to reduce waste generation and embrace reusable alternatives. Students, staff and canteen owner of the college are aware about use of electronic documents instead of printing and avoiding single-use plastics. College Implements the initiatives to minimize waste production in events, canteens, and other areas.

### **3. Water Conservation**

The College has an active Rain water harvesting, Borewell recharge, Construction of tanks and bunds, Waste water recycling & Maintenance of water bodies and distribution system in the campus. Rain water harvesting project has been implemented in the college. The roof water is collected and used as distilled water by all the laboratories throughout the year. The college has borewell recharge and maintenance of water bodies and distribution system in the campus. College has constructed tanks and bunds for conservation distribution system in the campus.

#### **Water Efficient Irrigation System**

College has reduced the demand for irrigation water through water-efficient irrigation technology.

<b>Irrigation System</b>	<b>No of Plants</b>	<b>Area</b>
Borewell with Pipe	100	930 sqm
Water Filter West Water	50	300 sqm





**Borewell With Pipe**

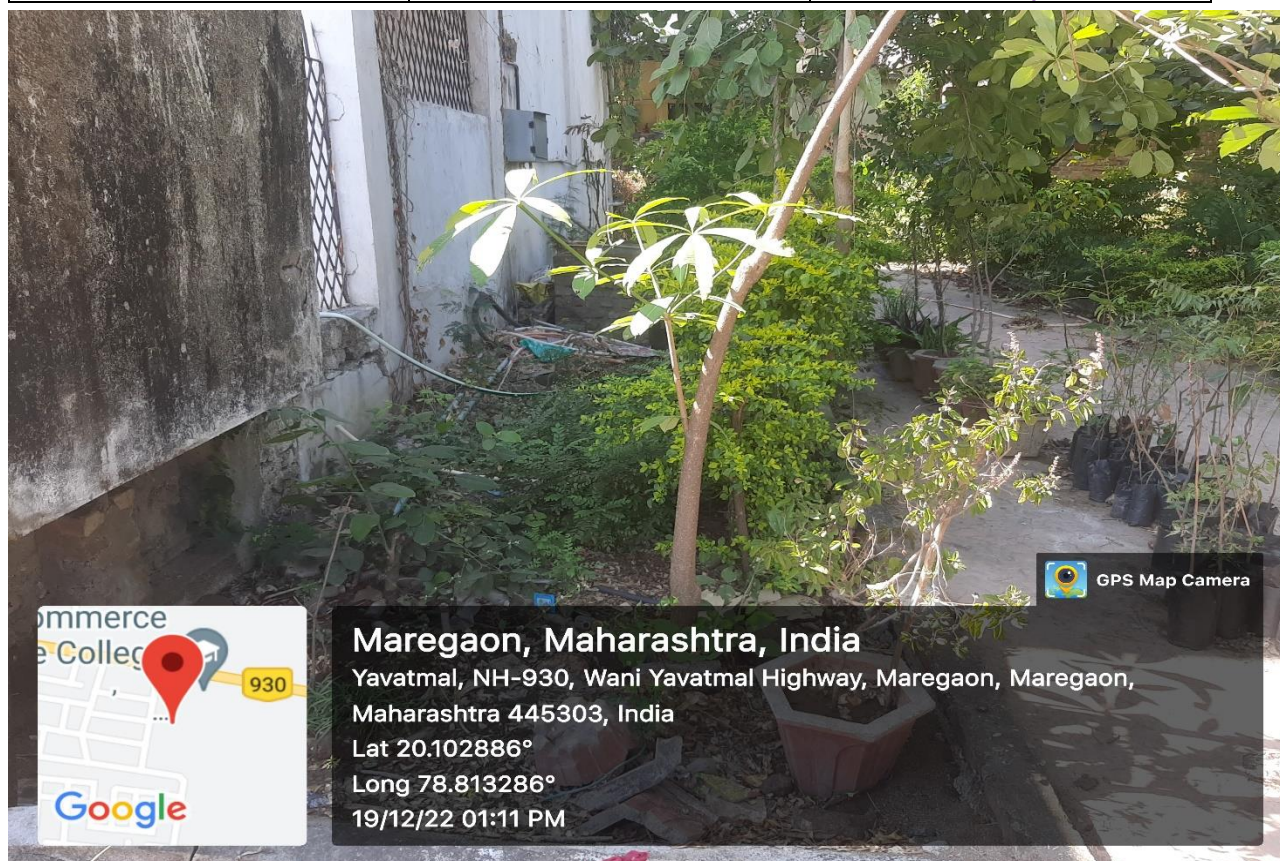


### **Waste Water Treatment:**

College treated waste water to tertiary standards, so as not to pollute the water streams.



West Water Source	No of Plants	Area
Water Filter	50	300sq.m



### Water Filter West Water

#### Use of Treated Grey Water:

College used treated waste water for in-situ applications, to reduce dependence on potable water. Water outlets from various sources are conserved in the botanical garden and in college premises.

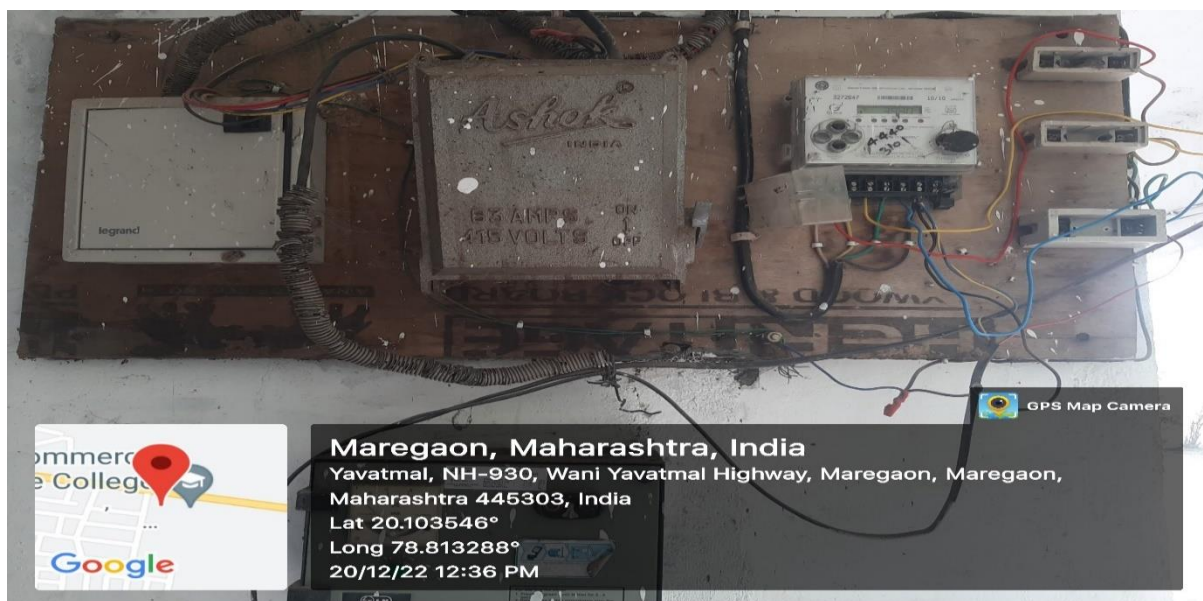
Total volume of waste water generated (Litres/day)	
Capacity of sewage treatment plant (Litres)	200 Litre
Total Volume of waste water treated & available for reuse (Litres/day)	20 Litre
Number of working days	30 Litre
Total volume of treated waste water available annually (Litres)	7200 Litre

College has system for water consumption, to measure & monitor the water performance.

Borewells meters	01	100 Unit/Month
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Borewell Control Panels



Borewell Meter





**Water Purifier for Staffs**



**Water Purification Plant of the College**



**Pure Drinking Water for students**

**Water Harvesting project:**







## **GREEN CAMPUS INNIITIATIVES:**

### **1. Botanical Garden:**

The college has botanical gardens with various types of medicinal plants and ornamental plants which are successfully fulfill the purpose of biodiversity conservation and campus beautification. The importance of the Botanical Garden is to conserve the plant species and to motivate the students about plant diversity and the role of botanical garden for ecofriendly environments. The aim of establishment of botanical garden to promote the environmental education and student are awareness about plant diversity, threaten and endemic flora of the region. In a botanical garden repository of germplasm collection for having wide genetic base with special reference to the representative of plant species such as ornamental plants, economically importance plants, medicinal plant and educative plant species.

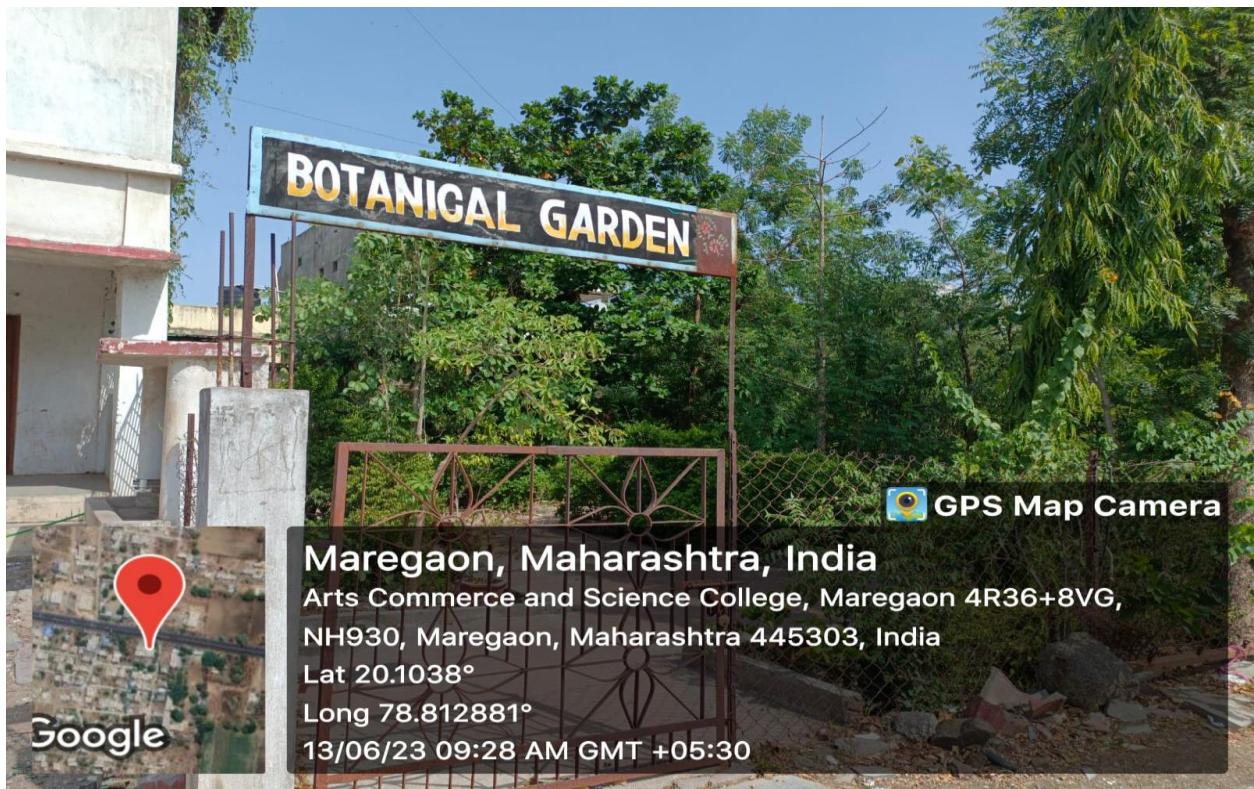
We use Botanical Garden as a learning resource centre with live examples, where we conduct specific program for the awareness and boosting interest of student in nature and environment such as:

- Study of plant adaptation
- Study of medicinal plant and their therapeutic values
- Study of common plant and their uses
- Studies of common trees

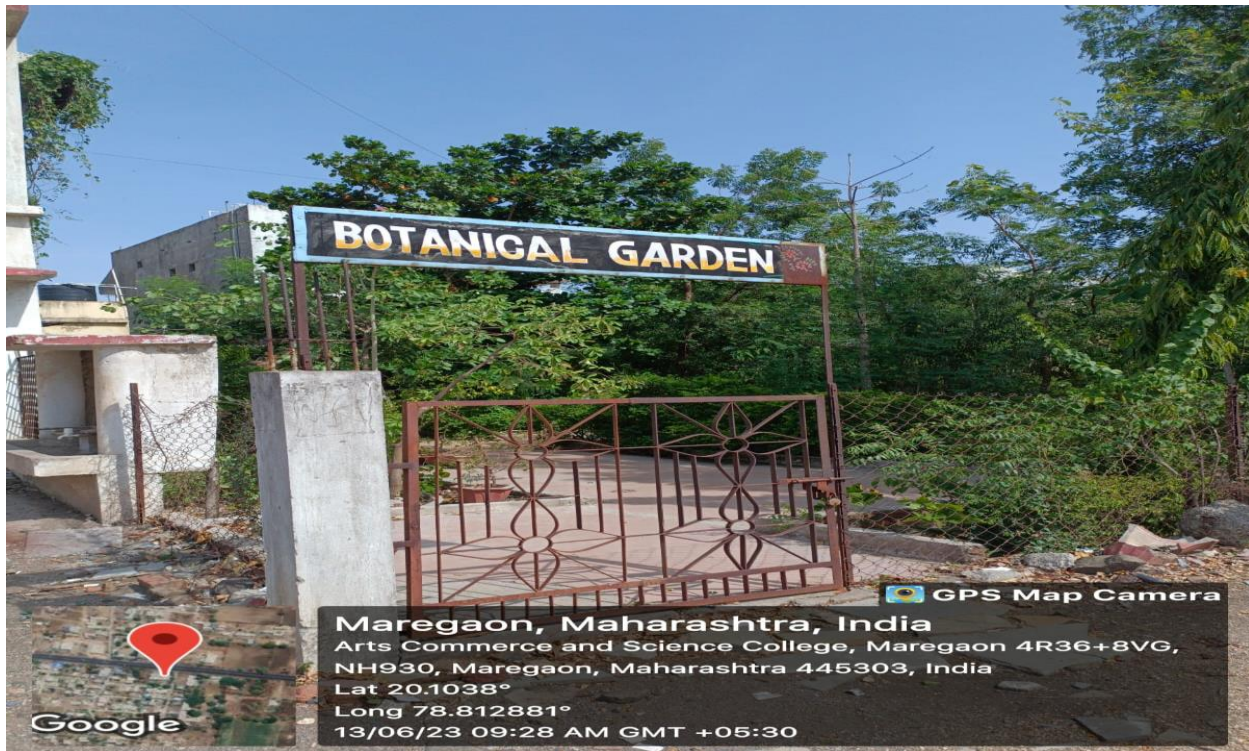
Botanical garden use as the biggest outdoor class room, which is an exploratory centre to facilitate the free flow of quantitative and qualitative information which is given in theoretical syllabus such as the plant ecological experiment viz. Density, abundance, frequency of plant species. Botanical garden includes ex-situ maintenance of economically important plant species ornamental plants and medicinally important rare and endangered plant species.













### **Organic Fertilizers & Pesticides:**

College ensures the use of organic fertilizers and pesticides in the botanical garden and for the plants and trees in the college campus so as to reduce health impacts on college students and teachers.

### **Green House-keeping:**

College use environment friendly cleaning products, so as to prevent chemical related health hazards.

### **2. Vermicompost Project:**

The college has vermicompost project. The aim of project is to educate and inspire students about the practical benefits and environmental value of vermicomposting. So, that they and their peers continue to compost throughout their future lives. In addition to that, we hope to expand the program in future so that as much organic waste as possible can be diverted from the landfill to the compostors and be processed in environmentally sustainable ways. We used the red wriggler in our vermin compost. We moistened the substrate regularly to provide the right moisture (60-80%) for the vermin worms to grow and multiply. This is the first Worm Compost plant started ever in Maregaon and Wani Tehsil. The product (Worm compost) was distributed to poor and needy farmers of Maregaon free of cost.

Vermiculture is a substantial way of reducing wastes, producing fertilizers and maintaining the balance of the ecological environment. Vermicomposting can produce high- quality fertilizers which are better compared to other commercial fertilizers in the market. Vermiculture converts farm wastes into organic fertilizer making it an environment-friendly technology.









### 3. Green Initiatives Activities

On the occasion of "Raksha Bandhan", the students were making handmade Rakhi and tied to trees and celebrating Raksha Bandhan on 07<sup>th</sup> Aug. 2017. 38 students were participating in this program. Students are aware about importance of Environment for living organism.



2. Organized tree plantation program on the occasion of Raksha Bandhan, dated 27<sup>th</sup> Aug. 2018. 41 students, teaching and non teaching staff participating in this program





3. College organized tree plantation program, dated 31<sup>st</sup> Jan. 2019. 49 students are participating in this program.



4. Organized tree plantation program on the occasion of Independence Day, dated 15<sup>th</sup> Aug. 2019. 49 students, teaching and non-teaching staff were participating in this program.



5. Organized tree plantation program, dated 2<sup>nd</sup> July 2018. 10 students were participating in this program.



6. Organized tree plantation program, dated 03<sup>rd</sup> Sep. 2019. 20 students were participating in this program.

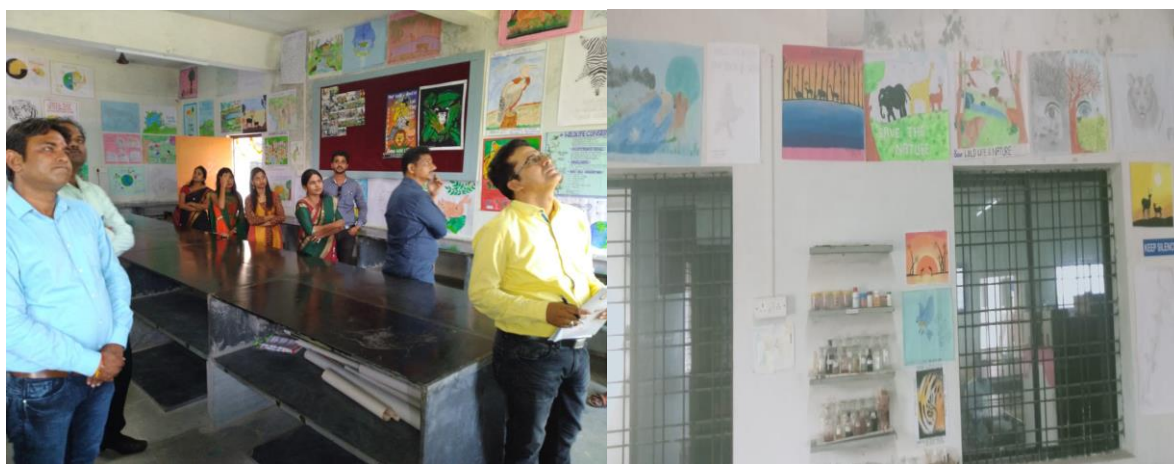


7. Organized campus cleaning activity, dated 07<sup>th</sup> Sep. 2020. 10 students were participating in this program.





8. Organized poster competition on wild life conservation at college level, dated 03<sup>th</sup> Oct. 2018. 43 students were participating in this program.



## 5. Disabled-friendly, barrier free environment:

College has facilities to differently abled students. The college building has non-slippery ramps, preferred parking and all required facilities for differently abled students. Faculty members and staff friendly behave with them.





Construction work in the college is going on with excellent facilities for differently abled students.



## Bills

CASH MEMO				
<b>DIAMOND BATTERIES SERVICE</b> Mohata Complex Block No. 26, Yavatmal Road, WANI - 445304			Mo. 9785427276, 7385307189 7020454030, 9923038891	
2021				
Auth. Dealers : SF Sonic Batteries, Microtek Inverter, Autobat Batteries & Solar, Livguard Batteries				
M/s. <u>Principal, Arts, Comm &amp; Science College, Maregaon</u> Veh. No. _____			Bill No. .*. 3804 Date : 02/09/2021.	
S.No.	PARTICULARS	QTY.	RATE	TOTAL AMOUNT
①	Auto Bat Battery - 1000. 150AH, 30+30 month warranty, B.W.			14800.
②	Auto Bat Battery, 1000. 150AH, B.W.			14800.
<b>Paid and Cancelled</b> <u>Principal</u>				1 29600/- 8000 23600/-
<b>Bank Details</b> Bank Name : Bank of Maharashtra Bank A/c.: 60037233209 IFSC Code : MAHB0000064 A/c. Holder Name : Diamond Batteries Service Branch : Hyderabad Road, Wani			<b>TOTAL</b>	
Terms : 1) No Exchange no return. 2) Receipt subject to clearance of cheque. 3) Warranty as per manufactures warranty policy. 4) No warranty for breakage of any part.		Goods received in good condition Customer Sign. <u>For</u> <b>Diamond Batteries Service</b>		

Maregaon, Dist. Yavatmal

# DIAMOND BIKE POINT



Pro. Md. Sharif  
Mo. 9637868633  
9765427276

Panchashil Nagar, Bramhani Road, WANI

Name: principal Arts, Comm, Sci  
College, Maregaon

No. 465  
196

Date: 30/09/17

Qty.	Particulars	Rate	Amount
①	Microtek Inverter 3.7KV (01pc) 24 months warranty	22500	22500
②	Autobattubler Battery 200AH 60 months warranty (30+30) (100%/55%) Qu. (06PCS)	18500	1,11,000
③	Installation + wiring	-	2500
④	freight	-	700

Paid and Cancelled  
Principal

Principal

Principal  
Arts, Comm & Sci College  
Maregaon, Dist. Yavatmal

S. J. Svelin

1,36,700

Thanks !

Diamond Bike Point

14:04