



KAKATIYA GOVERNMENT COLLEGE

HANUMAKONDA, TELANGANA STATE – 506001

(Affiliated to Kakatiya University, Warangal)

(e-mail:warangal.jkc@gmail.com, website: <https://gdcts.cgg.gov.in/hanamkonda.edu>)



7.1.6. The institutional environment and energy initiatives

Geo tagged photographs of the facilities

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GREEN AUDIT

Internal Green Audit Committee

Chairman : **Dr.K. Mallesham**

External Member :: **Dr. G.Raja eddy**

Coordinator : **Dr. B.Vijayapal**

ReddyMembers : **Dr.B.Ramesh**

Dr.K.Ganesh

Dr.D.SureshBabu

Sri. B.Raju

College Profile

Name of the College: **Kakatiya Government College Hanumakonda**, Warangal

Contact Info: Dr. **K. Mallesham**, Principal,
Mobile: 9542697401

Campus Area: 5 Acres

Built-up Area: 10234.3 sq. m.

Is the building has ventilators for natural air flow in all rooms: Yes

Physical Structure

The available land of the college: 5 Acres

The built-up area of the college: 110161.0884 Sq.Ft.

No. of Class Rooms	22
No. of Laboratories	18
No. of Conference halls	01
Library Halls	01
Canteen	01
Any other (please specify) Class room with LCD facility	10

Green Audit

OBJECTIVES OF GREEN AUDIT

The main aim of the green audit is to assess the quality of environment and management strategies to be implemented in Kakaitya Government College Hanumakonda, Dist: Hanumakonda.

The objectives of green audit are:

1. To assess the quality of the soil, water, air and environmental risk assessment.
2. To quantify the energy, water consumption of college.
3. To assess management of solid and liquid wastes and measures to be taken to reduce waste.
4. To assess the carbon footprint of college.
5. To analyze recycling programs and plans to be implemented.

TARGET AREAS OF GREEN AUDITING

There are different areas of the environment (Soil, Air, and Water) and resources (Water, energy, waste) to audit in an institute to assess the quality of different parameters.

They are as follows:

Auditing for water management
Auditing for waste management
Auditing for green campus management
Auditing for energy management
Carbon footprint analysis

METHODOLOGY ADOPTED:

The methodology adopted to conduct the Green Audit of the Institution had the following components

Onsite Visit:

The team members of green audit visited different departments and areas to based in college and will gather the data

Focus Group Discussion:

The Focus Group discussions will be held with the staff members, students and Science club, Eco-club members focusing on various aspects of Green Audit. The discussion will focus on identifying the attitudes and awareness towards environmental issues at the institutional and local level

Survey:

For energy, water, waste management and Carbon footprint analysis survey forms are and questionnaires will be used.

Survey forms:

Water management

Sl. NO	PARAMETERS	Response	Remarks
1	Source of water	Bore well,	
2	No. of Wells (Bore well)	02	
3	No. of motors used	02	
4	Horse power – Motor	3Hp-02,	
5	Depth of well –Total	120 feet	
6	Water level	50 feet	
7	Number of water tanks	6	
8	Capacity of tank	1000 lit-06,	
9	Quantity of water pumped every day	6000 liters	
10	Any water wastage/why?	No	
11	Water usage for gardening	1000 lit	
12	Waste water sources	Labs, Canteen, Water plant	

13	Use of waste water	Waste water from the water plant is used to Garden.	
14	Faith of waste water from labs	After neutralization with water pumped into sewage canal.	
15	Whether waste water from labs mixed with ground water	No	
16	Any treatment for lab water	Neutralization	
17	Whether any green chemistry method practiced in labs	Rain water has been used as the distilled water	
18	No. of water coolers	nil	
19	Rain water harvest available?	Yes	
20	No. of units and amount of water harvested	02-2000 L	
21	Any leaky taps	Nil	
22	Amount of water lost per day	Nil	
23	Any water management plan used?	Audit for water usage conducted	
24	Any water saving techniques followed?	Awareness on save water is conducted to all the students , faculty and staff of the college	
25	Are there any signs reminding peoples to turn off the water?	Yes	

Energy Audit

KAKATIYA GOVERNMENT COLLEGE - HANAMKONDA

Details of College Electrical Peripherals and Devices

S.No	Room No	AC's	Fans	Tubes	Class room with LCD	Lab	Lab with LCD
1	1(PPL ROOM)	1	5	14	0	0	0
2	2(Office)	3	9	19	0	0	0
3	3(Entrance(ppl,office))	0	2	3	0	0	0
4	Portico	0	0	1	0	0	0
5	4(T/H Staff Room)	0	4	4	0	0	0
6	5(Chem Lab)	0	2	4	0	1	0
7	6(Chem Lab)	0	3	8	0	1	0
8	7(Chem Bal Room)	0	2	6	0	1	0
9	8(Chem Lab)		6	8		1	
10	12(PHY. Lab)		6	8			1
11	13(PHY. Lab)		4	6		1	
12	14(Chem Store room)			3			
13	15 (Commerce Dept.)	1	2	4			
14	16(Chem Staff Room)			6			
15	17(Phy. Staff Room)		4	6			
16	Maths Staff Room		2	1			
17	11 (Store Room)			2			
18	Staff Toilets		1	4			
19	Steps close to store Room			1			
20	Chem - Phy Corridar			4			
21	VC-POL. Sci. Corridar			5			
22	23 (Pol. Sci. Dept)		2	3			
23	24(Boitech Lab)		2	3		1	
24	25(Office Record room)						
25	19(Old History Room)		1				
26	26(Comp.Dept)	1	2	3			
27	27(Comp. Lab)	1	4	8	1		
28	28(Botany Staff Room)	1	4	6			

29	18(Economics Dept.)		1	1			
30	21(Zoo. Dept)		2	4			
31	22(Zoo. Lab)		6	19			1
32	20(Bot. Lab)		6	18			1
33	Botany Corridar			1			
34	Zoology Corridar			2			
35	Zoology Anti Room		1	2			
36	Ladies Toilets(Near Zoo. Lab)						
37	56(Micro Biology Class Room	1	4		1		
38	57(Micro Biology Class Room	1	4	8	1		
39	58(Micro BiologyLab)		4	15		1	
40	59(Micro Biology Dept))	1	1	2			
41	55(Bio Tech Lab)	1	3	7		1	
42	Bio Tech Lab - 31 Room Corridar						
43	31			1			
44	32(History Dept.)		3	3			
45	33(Exam Branch)		1	2			
46	34(Exam Branch)	1	2	4			
47	Exam Branch - Ladies NCC Room Corridar)	1	2	8			
48	35(Zoo. Lab)		5	5			
49	36(Bot. Lab)		2	2			
50	37		3	2			
51	38		3	2			
52	39(ELL)	2	4	12			
53	40(English Dept.)		2	4			
54	41(TSKC Lab)	4		24			1
55	43		4	4			1
56	44(NCC Girls Room)		1	4			
57	45		4	4			1
58	46		4	4			
59	47		4	4			
60	48		4	5			
61	49		3	3			
62	50		3	4			
63	51(Seminar Hall)	4	10	9	1		
64	52		2	5			
65	53						
66	54						
67	59		4	6			
68	60		4	5			

69	61		5	5			
70	62(Old Lib.)		3	5			
71	63 (Library)		6	5			
72	64 (Library	1	5	5			
	63-64 Corridar			1			
	65(Digital Library)		5	8			
73	66(RUSA)	1	5	6			1
74	67(RUSA)		5				1
75	68(RUSA)		5	6			1
76	69(RUSA)		5	6		1	
77	68-69 Corridar			5			
78	Rusa Steps Water Plant(Lib.)						
79	Rusa Gents Toilet(Lib.)		1	4			
80	RUSA-1		6	9			
81	RUSA-2		6	9			
82	RUSA-3		6	9			
83	RUSA-4		6	9			
84	RUSA Corridar (1-4)			7			
85	RUSA Gents Toilet		1	4			
86	29(IQAC)	1	2	5			
87	30(RUSA-UGC Room)		1	1			
88	Virtual Class Room	2	6	3	1		
89	Virtual Class Room- Adjacent Room	1	2	2	1		
90	Public. Admn Dept		1	3			
91	Ambedkar O.U. Staff Room		3	6			
92	Shed		3				
93	NCC Room		1	1			
94	Open Dias RUSA		3	4			
95	Physical Edn. Dept			1			
96	Gym		6	6			
97	Table Tennis Room		2	3			
98	OLD NSS ROOM/ M.COM CLASS ROOM		1	2			
99	Canteen		2	2			
	TOTAL	30	276	487	6	9	9

Environment Audit

Trees are vital. As the biggest plants on the planet, they **give us oxygen, store carbon, stabilize the soil** and give life to the world's wildlife. They also provide us with the materials for tools and shelter.

The college has a botanical garden in the campus at the entrance. The botanical garden is located in about 2400 yards and it is look after by Faculty of Department of Botany. About 25-35 plant species in the garden. The list of the Plants in the campus is as shown in the following table.

LIST OF PLANTS IN THE COLEGE CAMPUS (including Botanical Garden)

Shrubs and Ornamentals:

S.No	Scientific name	Family	Local Name
1	<i>Acalypha indica</i>	Euphorbiaceae	muripinda/
2	<i>Acalypha wilkesiana</i>	Euphorbiaceae	acalypha
3	<i>Bougainvillea spectabilis</i>	Nyctaginaceae	kagithpula chettu
4	<i>Ficus benjamina</i>	Moracea	figus
5	<i>Thevetia peruviana</i>	Malvaceae	pachaganneru
6	<i>Ixora coccinea</i>	Rubiaceae	nuruvarahalu
7	<i>Plumeria rubra</i>	Apocyanaceae	devaranneru-red flower
8	<i>Plumeria alba</i>	Apocyanaceae	devaganneru-white flower
9	<i>Hibiscus rosa-roja</i>	Malvaceae	mandhara
10			

11	<i>Bauhinia purpurea</i>	Fabaceae	devakanchanam /bauhin ia
12	<i>Conocarpus erectus</i>	Combretaceae	conocaparpus
13	<i>Ravenala madagascariensis</i>	Musaceae	east west plant
14	<i>Cycas ramphii</i>	Gymnosperm	cycas
15	<i>Tradescantia spathacea</i>	Commelinacea e	
16	<i>Musa paradisiaca</i>	Musaceae	banana/arati
17	<i>Almanda cathartica</i>	Apocyanaceae	
18	<i>Thuja orientalis</i>	Cupressaceae	thuja
19	<i>Jasminum sambac</i>	Oleaceae	malle
20	<i>Tabernaemontan a divaricata</i>	Apocyanaceae	kanakambaram
21	<i>Araucaria araucana</i>	Gymnosperm	Christmas tree
22	<i>Roystonea reg ia (Royal palm)</i>		Royal palm

TREES

S.No	Scientific name	Family	Local Name
1	<i>Peltophorum pteocarpum</i>	Ceasolpinaceae	peltophorm
2	<i>Azadiracta indica</i>	Meliaceae	neem/vepa
3	<i>Dalbergia sissoo</i>	Fabaceae	sissoo
4	<i>Samania saman</i>	Fabaceae	nidraganneru
5	<i>Pongamia pinnata</i>	Fabaceae	pongamia/kanuga
6	<i>Terminalia catappa</i>	Combretaceae	badam

7	<i>Syzygium cumini</i>	Myrtaceae	jamun/allaneredu
8	<i>Cocos nucifera</i>	Palmae	coconut/kobbari
9	<i>Mangifera indica</i>	Anacardiaceae	mango/mamidi
10	<i>Polyalthia longifolia</i>	Annonaceae	naramamidi
11	<i>Psidium guajava</i>	Myrtaceae	jama
12	<i>Phyllanthus emblica</i>	Euphorbiaceae	gooseberry/usiri
13	<i>Syzygium jambolarum</i>	Myrtaceae	Jamun/water jamun
14	<i>Leucaena leucocephala</i>	Fabaceae	subabul
15	<i>Bamboo sp.</i>	Poaceae	bamboo/veduru
16	<i>Manilkara zapota</i>	Sapotaceae	sapota
17	<i>Spathodia campanulata</i>	Bignoniaceae	tuliptree
18	<i>Anthocephalous chinensis</i>	Rubiaceae	kadamba
19	<i>Artabotrys hexapetalus</i>	Annonaceae	teegasampenga
20	<i>Grevillea robusta</i>	Proteaceae	silver oak tree
21	<i>Casuarina equisetifolia</i>	Casuarinaceae	casuarinas/sarugudu
22	<i>Terminalia arjuna</i>	Combretaceae	arjun/maddi
23	<i>Pterocarpus santalinus</i>	Cesalpiniaceae	redsander/errachandanam
24	<i>Samanea saman</i>	Fabaceae	Raintree
25	<i>Tectona grandis</i>	Verbinaceae	Teak

MEDICINAL PLANTS

S.No	Scientific name	Family	Local Name
1	<i>Aloe vera</i>	Asphodenaceae (Liliaceae)	kalabanda
2	<i>Phyllanthus emblica</i>	Euphorbiaceae	usiri
3	<i>Tinospora cordifolia</i>	Menispermaceae	thippateega
4	<i>Aristolochia indica</i>	Aristolochiaceae	gadidhagadapa
5	<i>Vitex negundo</i>	Lamiaceae	vavili
5	<i>Jatropha gossypifolia</i>	Euphorbiaceae	biodiesel plant/adavi amudam
6	<i>Crotalaria retusa</i>	Fabaceae	crotalaria
7	<i>Ocimum tenuiflorum</i>	Lamiaceae	basil/tulasi
8	<i>Lawsonia inermis</i>	Lythraceae	gorintaku
9	<i>Murraya koenigii</i>	Rutaceae	curry leaf/karivepa
10	<i>Bryophyllum pinnatum</i>	Crassulaceae	bryophyllum/ranapala
12	<i>Gynema sylvestre</i>	Apocyanaceae	podapatri
13	<i>Calotropis gigantea</i>	Asclepiadaceae	jilledu
14	<i>Euphorbia pulcherrima</i>	Euphorbiaceae	poinsettia
15	<i>Coleus aromaticus</i>	Lamiaceae	coleus

16	<i>Asparagus recemosus</i>	Lilioaceaea	shathavari
17	<i>Mimosa pudica</i>	Mimosaceae	Touch me not plant/atti patti
18	<i>Sauropus andragynum</i>	Phyllanthaceae	
19	<i>Catharanthus roseus(vinca)</i>	Apocyanaceae	vinca/bilaganneru
20	<i>Ficus carica</i>	Moraceae	anjeera
21	<i>Chamaecostus cuspidatus</i>	Costaceae	Costus
22	<i>Bixa orellana</i>	Bixaceae	Bixa/sindhuram
23	<i>Cymbopogon citratus</i>	Poaceae	Lemon grass
24	<i>Mimosa pudica</i>	Mimosaceae	Touch me not plant

Xerophytes

1. *Euphorbia molli*
2. Barrel cactus
3. Bryophyllum
4. *Kalanchoe pinnata* (Bryophyllum pinnata) –Crassulaceae

Overview of Botanical Garden

View of Botanical garden in the campus

All the plants in the garden are given QR Codes with the details of Common name, scientific name, family, habit and uses of plants. Students and other botany people also can find information about the plants by scanning it. Students also actively participate in the plantation programme in the garden. Border plants Acalypha, Duranta are planted by the students.

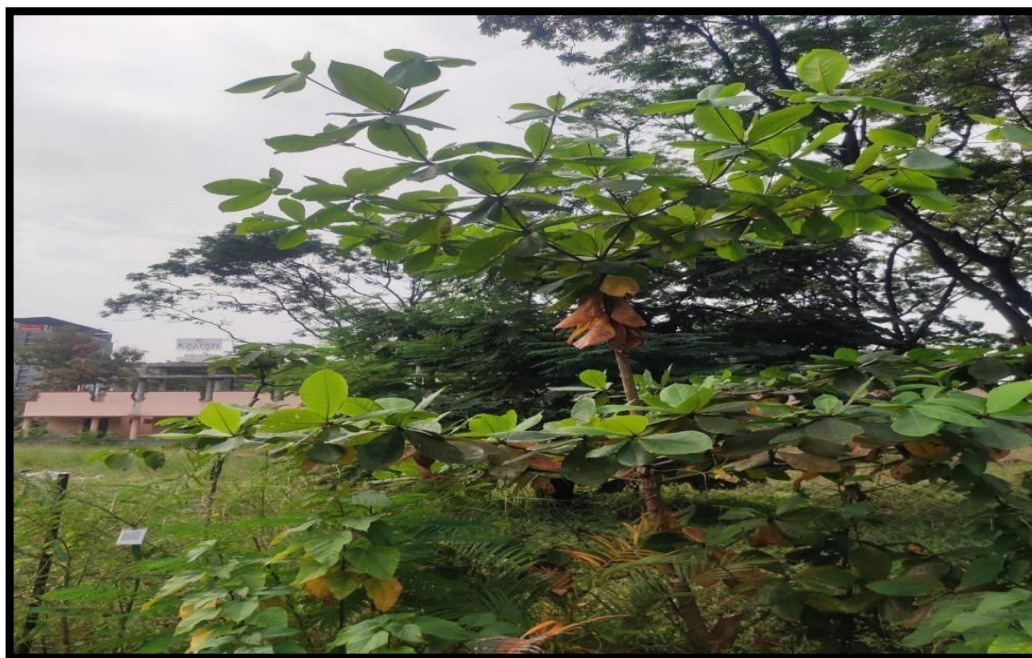
Haritha Haram flagship programme of Telangana undertaken every year in the college in monsoon season i.e in the month of June and July. But due to lack of space, every year about 30 -50 saplings are planted in the campus. Saplings were planted in campus where the space is available. Vegetable farming is not done due to lack of space in the campus. Medicinal plants are there in the botanical garden. About 20 medicinal plant species are there in the garden in 150 yards. Every day about 1000 liters of water is used to water the plants in campus from bore wells and also recycled water from the water purifier was directly connected for watering in the botanical garden. Compost prepared from biodegradable waste in the campus used to manure the plants. No chemical fertilizers or pesticides are used.



Mimosa pudica(touch me not)



Tinospora cordifolia(pateega)



Terminalia catappa(badam)



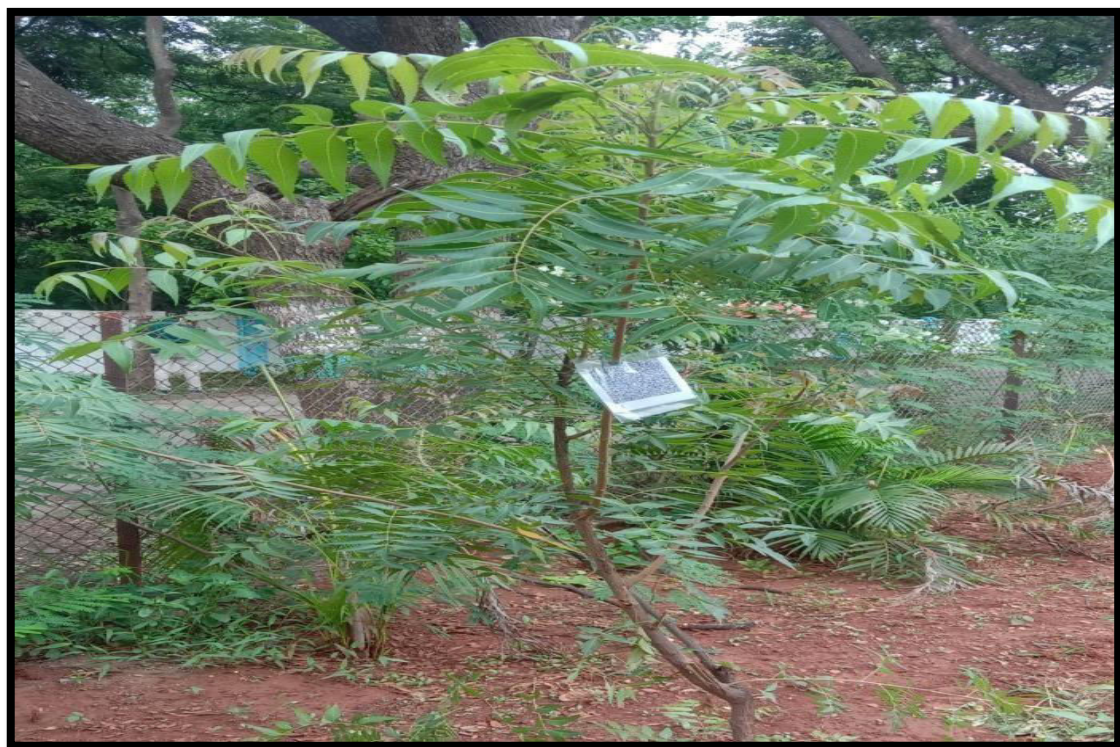
Phyllanthus emblica(usiri)



Vitex negundo

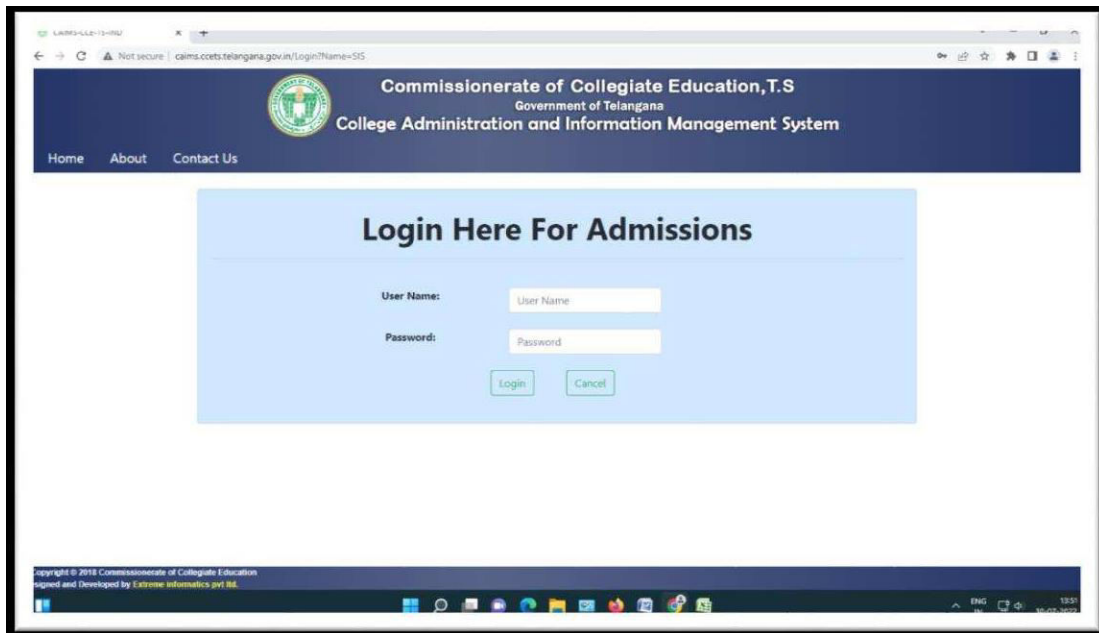
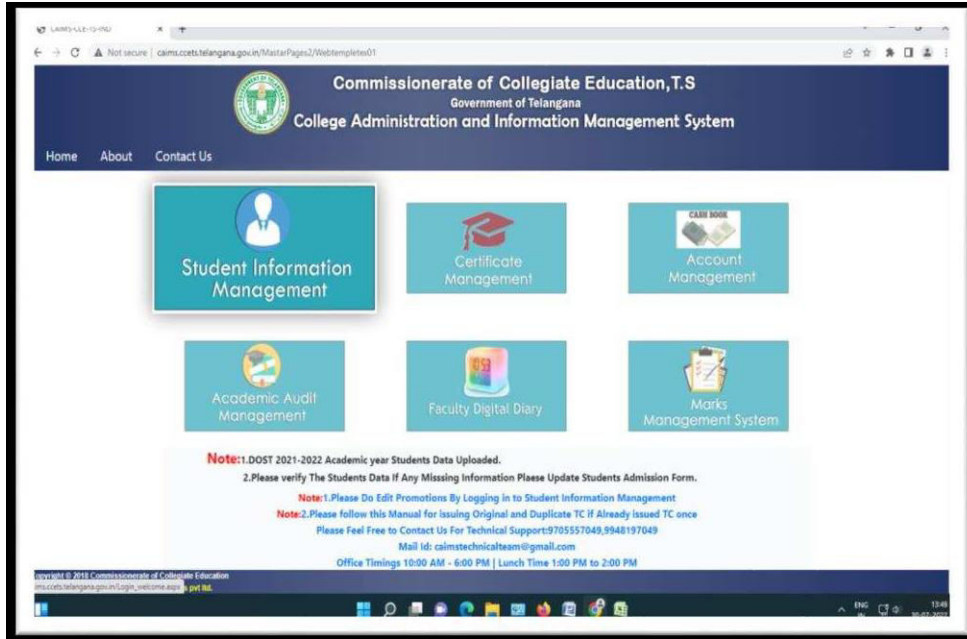


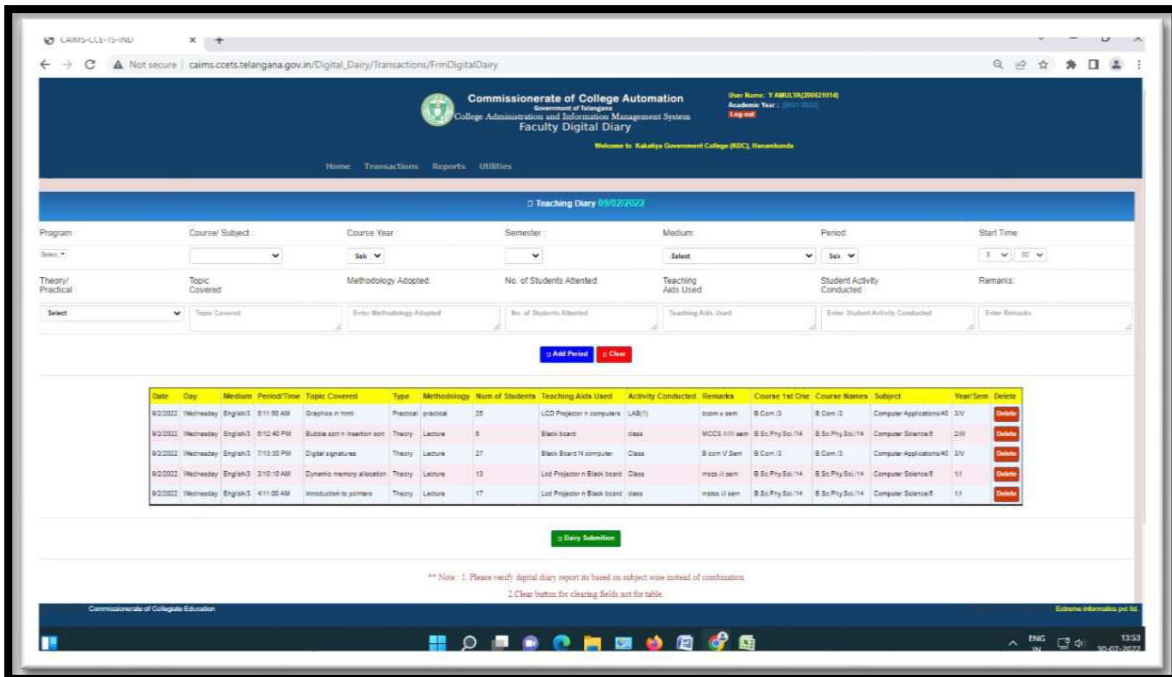
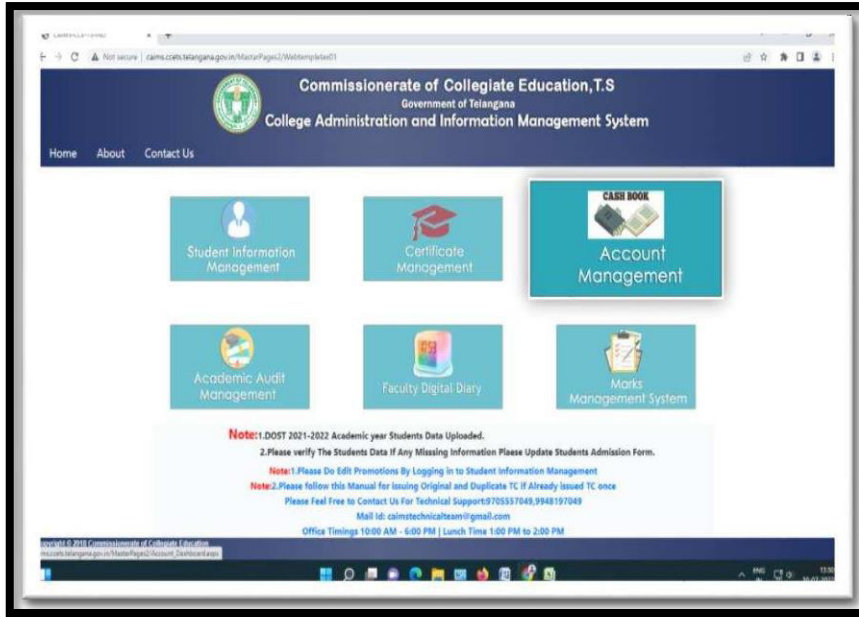
Spathodia campanulata



Azdiracta Indica

Paperless Office





Clean and Green campus recognitions / awards

Waste management

College generate basically the biodegradable waste which consists of fallen leaves ,twigs and weeds of campus area. In addition to this paper waste which is used for day to day work of different departments and paper used by the students. It is usually sent for recycling. E-Waste like damaged computer parts sent for proper disposal. Biodegradable waste like dry leaves, weeds, paper, food waste from the canteen which is used in preparation of compost in the campus. Glass waste is mainly generated by different science labs. This is sent for recycling. Unused and damaged articles with the permission of higher authorities which will be segregated and sold out


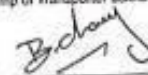

.Napkins are disposed of by using incinerators which were available in the girls toilet. The plastic waste is given to municipal waste collection vehicle or proper disposal. Students and staff are encouraged to use biodegradable and cloth bags instead of plastic.

e-scrap shifting certificate



**RAMKY EWASTE RECYCLING FACILITY
E WASTE TRANSPORT MANIFEST**

Form 6

1	Sender's name and mailing address (including Phone No.):	Kakatiya Govt College Haramkonda,
2	Sender's authorisation No, if applicable.:	
3	Manifest Document No.:	1992
4	Transporter's name and address (including Phone No.):	Ramky Enviro Engineers Ltd.
5	Type of Vehicle : (Truck or tanker or Special Vehicle)	D.C.M Eicher
6	Transporter's registration No.:	AP12A/G195/PC/2011
7	Vehicle registration No:	AP29 TB 1784
8	Receiver's name & address :	Ramky E Waste Recycling Facility (Ramky Enviro Engineers Ltd), Sy No 1/1, Plot No 25, Hardwar park, Maheshwaram(M), RR Dist., 500081
9	Receiver's authorisation No, if applicable.:	TSPCB/16/CFO/RO-RR-I/HD/2016-2595 Date :- 12 . 02 . 2016
10	Description of E Waste (Item, Weight/ Numbers):	E-waste :- 2113.4 Kg
11	Name and stamp of sender (Manufacturer/Producer (or) Bulk Consumer (or) Collection Centre (or) Retailishes (or) dismantler) Signature:  Day /Month /Year	05 / 08 / 2019
12	Name and stamp of Transporter acknowledgement of receipt of E-Wastes Signature:  Day /Month /Year	05 / 08 / 2019
13	Name and stamp of Receiver (Collection Centre (or) Retailishes (or) Dismantler (or) Recycler) certification of receipt E-Waste Signature:  Day /Month /Year	05 / 08 / 2019

Copy number with color code (1)	Purpose (2)
Copy 1 (Yellow)	To be retained by the sender after taking signature on it then the transporter and other three copies will be carried by transporter.
Copy 2 (Pink)	To be retained by the receiver after signature of the transporter.
Copy 3 (Blue)	To be retained by the transporter after taking signature of the receiver.
Copy 4 (Green)	To be returned by the receiver with his/her signature to the sender.



Solid waste collecting by NCC cadets

Approximate quantity of waste generated per day (in kg)

<i>Office</i>				
Approx.	Biodegradable	Non -Biodegradable	Hazardous	Others
<1Kg	<1Kg	nil	nil	nil
2-10Kg	nil	nil	nil	nil
>10Kg	nil	nil	nil	nil

<i>Laboratories</i>				
Approx.	Biodegradable	Non - Biodegradable	Hazardous	Others
<1Kg	nil	nil	< 1Kg	nil
2-10Kg	2-10Kg	6 kgs	nil	nil
>10Kg	nil	nil	nil	nil

<i>Canteen / kitchen</i>				
Approx.	Biodegradable	Non - biodegradable	Hazardous	Others
<1Kg	nil	<1Kg	nil	nil
2-10Kg	4 kg	nil	nil	nil
>10Kg	nil	nil	nil	nil

How is the waste generated in the college managed?

A).Composting/ Vermicomposting	Yes	The manure used to garden plants
B). Recycling	Yes	
C). Reusing	Yes	Glass ware , plastic cans
D). Other ways	Yes	

Different types of waste generated in the college and their disposal:

e-waste	Computer peripherals and electronic devices	The scrap of e waste is handed over to Telangana state Technical Services
Hazardous waste		
Solid waste	Food waste , Paper waste	GWMC Warangal
Dry leaves		Used to prepare compost
Canteen waste		Used to prepare compost
Liquid waste		Is sent to the drainage canals
Glass	Used and broken chemical bottles	
Unused Equipment	Laboratory equipment	Kept with departments
Napkins		incineration
Others (specify)		

Do you use recycled paper in college?	No
Any waste management methods used?	

2. Carbon foot print analysis

1. Total Number of vehicles used by the stakeholders of the college. (per day): 95
2. No. of cycles used: 12
3. No. of two wheelers used (average distance travelled and quantity of fuel and amount used per day): 80. 19000 m within the college. 2 liters
4. No. of cars used (average distance travelled and quantity of fuel and amount used per day); 15 and 3000 m and 1 liter
5. No. persons using common (public) transportation (average distance travelled and quantity of fuel and amount used per day): nil
6. No. of persons using college conveyance 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.): 01
8. Number of visitors with vehicles per day? : 115
9. Number of generators used per day (hours). Give the amount of fuel used per day. nil
10. Number of LPG cylinders used in the canteen
(Give the amount of fuel used per day and

amount spent). : 01

11. Quantity of kerosene used in the canteen/labs (Give the amount of fuel used per day and amount spent).: nil
12. Amount of taxi/auto charges paid and the amount of fuel used per month for the transportation of vegetables and other materials to the canteen. : nil
13. Amount of taxi/auto charges paid per month for the transportation of office goods to the college. : Rs 500/-
14. Average amount of taxi/auto charges paid per month by the stakeholders of the college.: Rs. 10,000/-
15. Use of any other fossil fuels in the college (Give the amount of fuel used per day and amount spent).: nil

16. Suggest the methods to reduce the quantity of use of fuel used by the Stakeholders / students/teachers/ non-teaching staff of the college. : Yes
17. Are the Rooms in Campus Well Ventilated? Yes

Water Management:

The source of water used in the College is two bore wells present in the campus. These wells are recharging with rainwater from the roof. A total of 6000 L of water is pumped out from the sources of water every day (Table -1). An average of 180,000 L of water is used by the College per month.

Physico-chemical Parameters:

Water is generally alkaline in nature due to the presence of carbonates and bicarbonates. The pH highest 7.60 was in the month of September. The Dissolved Oxygen (DO) is one of the most important parameters that reflect the physical and biological processes prevailed in water. DO level in water is depending upon the atmospheric air pressure, photosynthetic activity, temperature, salinity and turbulence. The solubility of oxygen increases with decrease in temperature. Moreover, the TDS represents the presence of both organic and inorganic

nutrients of the water. In the present investigation, maximum free CO₂ was found in summer and minimum in winter. Similarly, the Total Hardness of water is mainly due to the presence of various salts of calcium and magnesium.

Chloride is considered to be an important factor as it is one of the contribute to the Total hardness of freshwater. It is observed that the levels of Ammonia in this pond water was higher than the desired range which may adversely affect on the aquatic biota. Nitrates were observed, the highest of 0.61 mg/l recorded in the month of August.

Month	pH	DO	BOD	TDS	NH₄	Na	K	No₃
Jul.	7.42	10.20	9.02	106.75	1.24	5.67	1.56	0.59
Aug.	7.40	9.07	7.00	98.50	1.19	6.54	1.50	0.61
Sep.	7.60	8.45	8.07	153.75	1.28	6.61	1.58	0.60
Oct.	7.45	6.00	11.62	243.50	1.27	6.21	1.50	0.58

Plankton Collection and Analysis

Planktons are the microscopic plants (Phytoplankton) and animals (zooplankton) in and around the euphotic zone in an aquatic ecosystem. Biological methods used for the plankton analysis are sample collection, preservation, counting and identification of the aquatic organisms and processing and interpretation of biological data.

During the period of investigation, monthly samples were collected by a plankton net made of silk bolting cloth silk no. 25 (Mesh size 56 μm). Water sample (50 liter) was filtered through the net from littoral and open water zones and carefully transferred to 50 ml bottle and preserved in 4% formalin. Preserved samples were examined under a binocular microscope with different magnification. Quantitative analysis was done on a Sedgwick Rafter Counter cell by taking 1 ml sample. Taxonomic identification was carried out with the help of standard literature by Pennak (1978), Michael(1986), Kodarkar (1992) and Dhanapathi (2000).

Sedgwick Rafter Cell Method:

The rectangular cavity slide (50x20x1mm) contains exactly 1 ml (1000mm³) of water sample. The sample was shaken well and 1ml of sample was transferred quickly to the cavity with the help of graduated pipette. The cover slip was properly adjusted so that air bubbles do not remain inside. Binocular microscope was focused and slide examined.

Plankton Ind. / Lit = $n \times c \times$
1000/ Volume of sample. Where,
n – No. of Plankton
c – Concentration of Sample.

Qualitative and quantitative plankton analyses were done up to

the genus and plank tonic organisms were numerically counted, identified and confirmed by following using various monographs, books and other published literature Ward, Henry Baldwin and Whipple, Chon (1945).Needham, G. James and Needham, R. Paul.(1972), Patil and Gouder (1982), Pace, M. L. et. al., (1990), Battish (1992) and Ndebele M. M. R. (2012). After an accurate identification of each genus, the density of zooplankton was calculated as per the Lackey's drop method (Lackey, J. B.1938).

Zooplankton

Zooplankton plays an important role in an aquatic ecosystem not only in converting plant food to animal food but also provide an important food source for higher organisms. The study of freshwater fauna especially zooplankton, even of a particular area is extensive and complicated due to environmental, physical, geographical and chemical variation involving ecological, extrinsic and intrinsic factors. This is particularly so with freshwater fauna (Zooplankton) which plays a key role in preservation and maintenance of ecological balance and its basic study is wanting and absolutely necessary.

The seasonal fluctuations of the zooplankton population are a well known phenomenon and zooplanktons exhibits bimodal oscillation with a spring and autumn in the temperate lakes

and reservoirs Welch, (1952). This fluctuation is greatly influenced by the variation in the temperature along with many other factors. Temperature seems to exhibit the greatest influence on the periodicity of. Thus, in any aquatic ecosystem zooplankton not only take part in transferring food from primary to secondary level but also switch over conversion of detritus matter into edible animal food.

Zooplankton of four groups *Viz.* rotifera, cladocera, copepoda and ostracoda. The most significant feature of zooplankton is its immense diversity over space and time. Zooplankton species composition and their number in three months in Table.1 During the present investigation, the total zooplankton population was dominated by Rotifers in this lake, followed by Cladocerans, Copepodes and ostracods

Rotifera:

6 species belonging to rotifera has been identified. *Brachionus calciflorus* , *Brachionus falcatus* and *Keratella tropica* were more dominant among the rotiferans. High population was observed during October followed by September and August months. Fluctuations in zooplankton density have been attributed to turbidity. Welch (1952), Roy (1955), Tandon and Singh (1972) have shown a direct relationship between rotifera population and water

temperature. Dissolved oxygen has been correlated with abundance of rotifers.

Cladocera:

Cladoceran populations were maximum during in October followed by September and August month. The total 4 species of cladocera were identified in the present study, and observed in this period total study and they are seasonally fluctuated. Micheal (1969)

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Copepods:

The copepods population was maximum in the month of October. The total 4

species of copepods were identified in the present study. *Nauplius larva*, *Copepoda naplii*, were more dominant and observed in this period they are seasonally fluctuated.

Ostracoda:

The Ostracods population was maximum August and September. The total 4 species of Ostracods were identified in the present study. *Hemicypris fossucula*, *Heterocypris spp* were more dominant and observed in this period of total study and they are seasonally fluctuated. Chandrasekhar (1996), reported higher population of Ostracods during monsoon in Saroornagar lake of Hyderabad.

Monthly Variation in the Zooplankton (Group wise) population

Zooplankton Group	Aug	Sep	Oct	Min	Max
Rotifera	16	21	52	16	52
Cladocera	11	12	28	11	28
Copepoda	9	13	21	9	21
Ostracoda	43	23	20	20	43
Total	79	69	121		

Table shows Monthly variation of Zooplankton Population

S.No	ROTIFERA	Aug	Sep	Oct	Total
1	<i>Brachionus calyciflorus</i>	2	1	4	7
2	<i>Brachionus caudatus</i>	2	0	3	5
3	<i>Brachionus falcatus</i>	2	1	3	6
4	<i>Filinia opoliensis</i>	0	0	2	2
5	<i>Keratella tropica</i>	2	2	5	9
6	<i>Testudinella patina</i>	2	1	4	7
	Total	10	5	21	36
	CLADOCERA				
1	<i>Acropenus harpae</i>	1	1	3	5
2	<i>Alona rectangularis</i>	0	2	3	5
3	<i>Daphnia carinata</i>	2	0	4	6
4	<i>Daphnia sarsi</i>	2	2	7	11

	Total	5	5	17	27
	COPEPODA				
1	<i>Copepoda naplii</i>	2	1	5	8
2	<i>Cyclops strennus</i>	0	2	4	6
3	<i>Mesocyclops naplii</i>	2	1	3	6
4	<i>Nauplius larva</i>	2	2	6	10
	Total	6	6	18	30
	OSTRACODA				
1	<i>Cypris subglobosa</i>	9	6	6	21
2	<i>Hemicypris fossucula</i>	11	12	09	32
3	<i>Heterocypris sps</i>	11	09	6	26
4	<i>Llycypris gibba</i>	09	08	06	23
	Total	40	35	27	102

Conclusion:

From the present study, it may be concluded that all the physico-chemical parameters are at nearly permissible limit at all the 4 stations. Results of water quality assessment clearly showed that most of the water quality parameters vary slightly higher in the wet season than in the dry season. This lake was not considered to be more polluted. This lake has shown rich biodiversity of aquatic fauna. Therefore, it is suggested that the immediate measures are necessary to be initiated to avoid

further contamination of lake due to anthropological activities. The baseline data generated would help planning and future management decisions to develop fresh water lakes for better water quality and production of fish in the fresh water. This will ensure that some of the parameters in this study will not exceed levels that could be harmful to fish in the environment. Such a measure will guarantee the safety of the aquatic ecosystem.

Beyond the campus environmental promotion activities

Cycle rally



Ban on use of plastic



KAKATIYA GOVT. COLLEGE, HANUMAKONDA.
EARTH WEEK
(April 16th - 22nd)
Activities

- Campus Cleanup
- Essay Writing Competitions
- Rangoli & Elocution Competitions
- Plantation
- No Vehicle Day-Cycle Rally

- Eco-Club

2H4B+FCF, Sai Nagar, Hanamkonda, Telangana 506001, India

Hanamkonda
Telangana
India

35°C
95°F

2022-04-25(Mon) 08:40(am)

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ప్లాస్టిక్ బ్యాగులు వాడొద్దంటూ ప్రచారం



ప్రచారం నిర్వహిస్తున్న అధ్యాపకులు, విద్యార్థులు

విద్యారణ్యపురి: ప్లాస్టిక్ బ్యాగులు వాడొద్దంటూ హనుమకొండలోని కాకతీయ ప్రభుత్వ డిగ్రీ కళాశాల ఎకో క్లబ్ ఆధ్వర్యంలో అధ్యాపకులు, విద్యార్థులు ప్రచారం నిర్వహించారు. ఈమేరకు హనుమకొండలోని కూరగాయల మార్కెట్లో

వ్యాపారులు, వినయోగదారులకు శుక్రవారం అవగాహన కల్పించారు. ఈ సందర్భంగా కళాశాల ప్రెసిడెంట్ డాక్టర్ రాజారెడ్డి మాట్లాడుతూ ప్లాస్టిక్ వాడకంతో అనేక అనర్థాలు కలుగుతాయని తెలిపారు. పర్యావరణానికి విఘాతం కలిగించే ప్లాస్టిక్ ను త్యజించాలని సూచించారు. క్లాత్ బ్యాగులనే వాడాలని వినయోగదారులకు విద్యార్థులు సూచించారు. మార్కెట్లో పలువురికి క్లాత్ బ్యాగులను పంపిణీ చేశారు. కార్యక్రమంలో కేడీసీ ఎకో క్లబ్ కన్వీనర్ రమణారావు, ఐక్యూఎస్ కోఆర్డినేటర్ డాక్టర్ రమేష్, అధ్యాపకులు విజయపాలరెడ్డి, శ్యామ్, సత్యనారాయణ, అశోక్, రావుల మొగిలి గణేష్, ఓంకార్, శ్రీనివాస్, కిరణ్, రాధిక పాల్గొన్నారు.

సాక్షి
తెలంగాణ పత్రిక

Sat, 07 May 2022

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