



**SAKTHI COLLEGE OF ARTS AND SCIENCE FOR WOMEN**  
**ODDANCHATRAM – 624 619**

**GREEN AUDIT REPORT**

**2020 – 2021**



**DEPARTMENT OF ENVIRONMENTAL SCIENCES**  
**Bishop Heber College (Autonomous)**  
**Tiruchirappalli, Tamilnadu – 620 017**



## CAMPUS GREEN AUDIT



### CERTIFICATE

This is to certify that detailed Green Audit of **Sakthi College of Arts and Science for Women, Oddanchatram – 624 619 Tamilnadu** has been successfully conducted. The activities and measures carried out by the College have been verified based on the reports submitted by the College and found to be satisfactory. The College has evolved policies on Environment and Green campus in line with the Sustainable Development Goals. The efforts taken by the members of the faculty, students, support staff and the Management towards creating a strategic change in attaining holistic environmental sustainability is highly appreciated and commended.

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**Date: 23 October 2021**

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**NATIONAL ACCREDITATION BOARD FOR EDUCATION & TRAINING**  
**QUALITY COUNCIL OF INDIA**  
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SA- 270th AC Meeting February 28 ,2020\_Rev.01)

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## **PREFACE**

An Environmental Audit is a tool comprising a systematic, documented, periodic and objective evaluation of how well a project, organization or equipment is performing with the aim of helping to safeguard the environment. The audit should facilitate management control of environmental practices and assess compliance with policy objectives and regulatory requirements.

A clean and healthy environment aids effective learning and provides a conducive learning environment.

Green audit is an official examination of the effects a college on the environment. It helps to improve the existing practices with the aim of reducing the adverse effects of these on the environment concerned.

Higher Educational Institutions are committed to preserve the environment within the campus through promotion of energy savings, recycling of waste, water use reduction, water harvesting etc.

Green audit visualizes the documentation of all such activities taking stock of the infrastructure of the college, their academic and managerial policies and future plans in the form of an environmental audit report.

Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus.

Green audit promotes financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more relevant.

The audit process in Sakthi College of Arts and Science, Oddanchatram, Tamilnadu involved initial interviews with management to clarify policies, activities, records and the co-operation of staff and students in the implementation of mitigation measures. Staff and students were given training how to collect the data for the green audit process. This was followed by staff and student interviews, collection of data through the questionnaire-based survey, review of records, observation of practices and observable outcomes. In addition, the approach ensured that the management and staff are active participants in the green auditing process in the college.

The baseline data prepared for the College will be a useful tool for campus greening, resource management, planning of future projects, and a document for implementation of sustainable development of the college. Existing data will allow the college to compare its programs and operations with those of peer institutions, identify areas in need of improvement, and prioritize the implementation of future projects. The green audit reports assist in the process of attaining an eco-friendly approach to the sustainable development of the college.

The results presented in the green audit report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. The Green Audit team expects the management to express their commitment to implement the recommendations.



  
**Prof. A. ALAGAPPA MOSES**  
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**Date: 23 October 2021**

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## CHAPTER I

### INTRODUCTION

***“Education is a liberating force, and in our age, it is also a democratizing force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances”*** - so defined Padmabushan Arutchelvar Dr. N. Mahalingam, Chairman, Sakthi Groups.

Following the great man’s footsteps, Dr. K. Vembannan, M.B.B.S., M.S., the Managing Trustee of Sowdamman Charitable Trust is a staunch believer that “Education makes one more humane, independent and perfect. It is the most powerful weapon for upliftment of mankind.”

Being a visionary, Dr. Vembannan founded Sakthi College of Arts and Science, Oddanchatram in the year 2009 as a temple of learning. The college functions with the noble aspiration of uplifting the moral and educational standards of the women of the rural area in and around Oddanchatram, Tamil Nadu, Palani. It has the vision of empowering women through value-based education, with special concern for the economically disadvantaged and the first generation learners. The mission of the college is actualized in the institutional goals, administrative policies, academic programmes, co-curricular and extra-curricular activities, staff enrichment initiatives and student support systems. The ethical and moral formation of staff and students is seamlessly woven into the fabric of campus life. Innovation, student-centred modes of teaching and learning, extensive use of technological aids and research-based activities enrich the intellectual life on the campus.

The Institution has been recognized under (2f) and (12b) of the UGC Act. It is affiliated to Mother Teresa Women’s University, Kodaikanal. Having started functioning with 129 students in the academic year 2009, it has now reached the strength of 1100 students. The proof of its adherence to standard lies in the milestone achievement of having bloomed well with 11 Under-graduate, 10 Post-graduate and 07 Pre-doctoral (M.Phil.)

Programmes. The College offers innovative curricula, opportunities for holistic development and a highly disciplined and diversified environment for students to surpass in scholastic, non-scholastic and research pursuits. However, while keeping pace with the changes in higher education at the national and global level, the institution still retains its local flavour and continues to offer value-based education with a special focus on the underprivileged.

### **The Emblem and Landmark Structures**



**Fig. 1: The College Emblem**



**Fig. 2: Magnificent College Entrance**



**Fig. 3: The Main Block**



**Fig. 4: View of the Temple and Main Building**

### **SAKTHI VISION**

#### **INITIATE INNOVATE, INCULCATE**

Sakthi Educational Institution pursues a philosophy of perpetual acquisition of knowledge. Apart from academic curriculum, equally important is our policy to provide value-based education and to bring out the hidden potentials within optimism.

### **SAKTHI MISSION**

"To act as the nurturing ground for young professionals who seek to make their mark and to create a talent pool for various Educational Institutions so that there may be synergistic growth for both"

## **CHAPTER II**

### **CAMPUS ENVIRONMENTAL AUDIT**

#### **2.1 Campus Environmental Audit**

An Environmental Audit is a tool comprising a systematic, documented, periodic and objective evaluation of how well a project, organization or equipment is performing with the aim of helping to safeguard the environment. The audit should facilitate management control of environmental practices and assess compliance with policy objectives and regulatory requirements. (European Environment Agency, European Commission 1999, Brussels).

Environmental auditing is a systematic, documented, periodic and objective process in assessing an organization's activities and services in relation to:

- Assessing relevant statutory and internal requirements
- Facilitating understanding of good environmental practices
- Promoting good environmental management
- Maintaining credibility with the public/clients
- Raising staff awareness and commitment to departmental environmental policy
- Exploring improvement opportunities
- Establishing the performance baseline for developing good sustainable practices.

#### **2.2 Green Audit towards Sustainable Development**

Sustainable Development (SD) is one of the biggest challenges of the twenty-first century and there can be no sustainability where educational

institutions (Universities, Institutions of Higher Education, and Schools) promote un-sustainability. In modern society 'No institutions are better situated and more obliged to facilitate the transition to a sustainable future than schools, Colleges and Universities'.

**Sustainable Development Goals (SDGs)**

The 17 Sustainable Development Goals and 169 targets which has been proposed demonstrates the scale and ambition of this new universal agenda. They seek to build on the MDGs and complete has not been achieved. They seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and Girls. They are integrated and in and indivisible and balance the three dimensions of Sustainable Development: the economic, social and environmental. The Goals and Targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet.



**Fig. 5: SUSTAINABLE DEVELOPMENT GOALS**

In spite of a number of SDGs and an ever increasing number of Universities / Institutions of Higher Educations and Schools becoming engaged with the principles and concepts of SD, especially in the developed world, most of them to be traditional in India.

### **2.3 Environmental Audit**

Environmental auditing has become a valuable tool in the management and monitoring of environmental and sustainable development programmes. The information generated from audit exercise provides important information to many different stakeholders.

Although seen primarily as a tool in commerce and industry, creative application of environmental auditing techniques can improve transparency and communication in many areas of society where there is a need for greater understanding of environmental and ecosystem interactions. The environmental audit is a systematic process that must be carefully planned, structured and organized. As it is part of a long term process of evaluation and checking, it needs to be a repeatable process which can be readily replicated and can reflect change in both a quantitative and qualitative manner.

Universities and Colleges are regarded as “Small Cities” due to their size, population and the multifarious activities, which have some serious direct and indirect impacts on the local environment.

### **2.4 Campus Green Audit**

The campus environmental audit is a common tool that many colleges and universities have employed in recent years. A campus environmental audit is both a summary and a report card for a campus and a way to evaluate where and how resources are being used. An environmental audit is also the first step in being able to quantify whether or not current and/or future environmental efforts are actually making a difference. As such, an environmental audit is the beginning of the sustainability planning process. The results can be used to quantify what kinds of impacts the campus community has on the environment and what steps the college can take to reduce these impacts.

## **2.5 Green Audit**

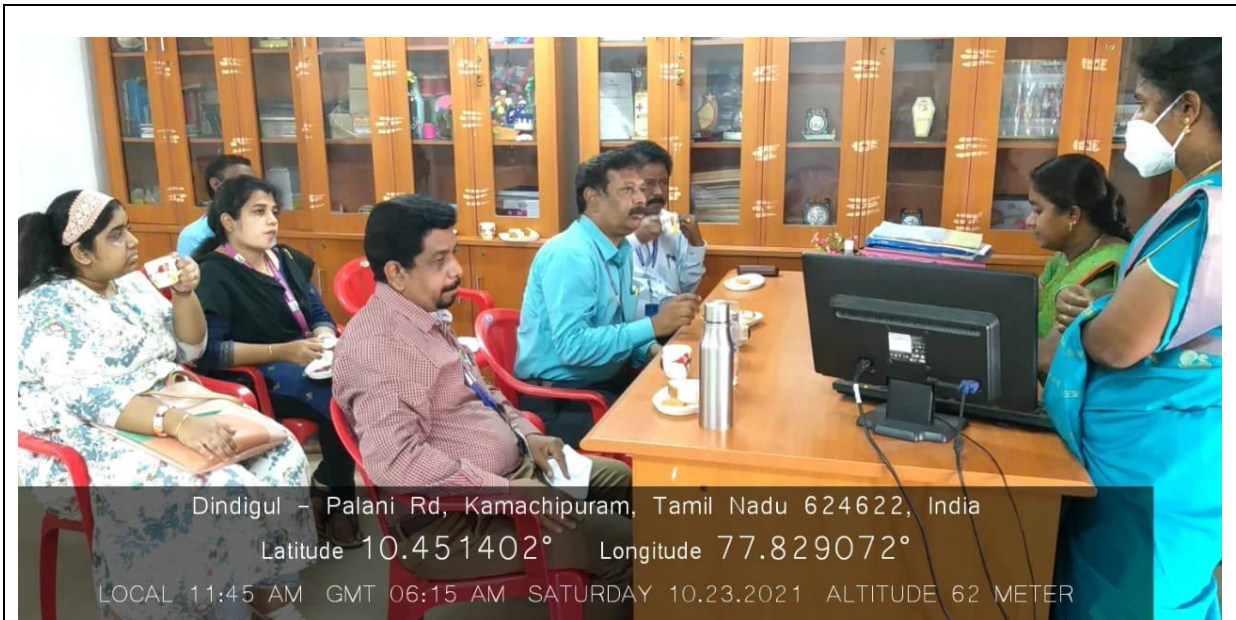
Green Audit is defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyse environmental practices within and outside the Institute, which will have an impact on the eco-friendly ambience and sustainable ecosystem. It is a useful tool that can be used to understand existing practices and resource use to highlight the prospects of introducing resource efficiency in the ecosystem. Green audit provides cognizance on scope for improvement of environment and ecosystem of the campus. Thus, it is imperative that Sakthi College of Arts and Sciences for Women, Oddanchatram evaluate its own status on environmental sustainability and contributes towards sustainable future.

## **2.6 Pre Audit Stage**

The process of Green Audit started with a pre-audit meeting that has provided an opportunity to reinforce the scope and objectives of the audit. The deliberations focused on the procedures to be followed in conducting the audit. This meeting is an important prerequisite for conducting green audit as it provides the first opportunity to meet and interact with the auditee and deal with any matters of concerns. The meeting was held at Sakthi College of Arts and Sciences for Women, Oddanchatram during October 2021. The audit protocol and audit plan were discussed in detail and a Green Audit team was constituted with a staff adviser and student members.

- a) Preliminary literature review of concepts and methodologies related to green audit.
- b) Discussion with the management staff on various systems installed in the campus.
- c) Awareness creation and interaction with the staff and students on the concept of green audit. Walk through the entire campus to understand the nature of water use, energy use and waste management systems in the campus.

## Pre-Audit



**Fig. 6: Pre-Audit Discussion with the Principal**



**Fig. 7: Pre-Audit Meeting with Staff and Students**



## **2.7 Commitment of the College**

The College has shown the commitment and keen interest towards conducting green audit and encourages green practices. The College is committed towards Education for sustainability and implementation of sustainable strategies, reducing carbon foot print and effective utilization of waste into wealth.

## **2.8 Goals and Objectives**

The goal of Green audit is *“Ensuring Environmental Sustainability (EES) through reducing environmental foot print such as carbon, water, food, and land, management and conservation of the natural resource base, and the orientation of Education for Sustainable Development (ESD) by evolving Institutional policies on various environmental attributes in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations”*.

## **2.9 Objectives:**

- To evolve institutional policies on various environmental attributes such as water, waste and sanitation and to assess the patterns of consumption of energy and water
- To measure the quantum of generation of wastes and hazardous substances
- To evaluate the level of awareness among the students regarding environmental resources
- To inculcate the concepts of 5 R principle such as Reduce, Refuse, Recover, Recycle and Repurpose among the stakeholders, thus making the organization as a better steward,

- To implement environmental management strategies so as to reduce overall environmental foot print.

## 2.10 Benefits of the Green Auditing

• More efficient resource management
• To provide basis for improved sustainability
• To create a green campus
• To enable waste management through reduction of waste generation, solid- waste and water recycling
• To create plastic free campus and evolve health consciousness among the stakeholders
• Recognize the cost saving methods through waste minimizing and managing
• Point out the prevailing and forthcoming complications
• Authenticate conformity with the implemented laws
• Empower the organizations to frame a better environmental performance
• Enhance the alertness for environmental guidelines and duties
• Impart environmental education through systematic environmental management approach and Improving environmental standards
• Benchmarking for environmental protection initiatives
• Financial savings through a reduction in resource use
• Development of ownership, personal and social responsibility for the College and its environment
• Enhancement of college profile
• Developing an environmental ethic and value systems in youngsters.
• Green auditing should become a valuable tool in the management

and monitoring of environmental and sustainable development programs of the college.

## **2.11 Modules Campus Green Audit**

Campus Green Audit (CGA) is a process of resource management. They are individual modules carried out in a defined interval illustrating an overall improvement or change in the institution over a period of time. The concept of Eco-friendly campus mainly focuses on the efficient use of energy and water; minimize waste generation, economic efficiency and reduction in environmental foot print. All these indicators are assessed in the process of Campus Green Audit. The CGA promotes conservation energy, water and waste management. The audit stages are as follows:

### **I. Pre-audit Stage**

### **II. Audit Stage**

- a. Audit for various environmental aspects
- b. Checking of documents and evaluation
- c. Review of Environmental Policy
- d. Review of Programmes or Activities

### **III. Post-audit Stage**

- a. Land
- b. Energy
- c. Water
- d. Waste
  - i. Wastewater
  - ii. Solid Waste
    1. E Waste
    2. Biomedical waste

- e. Food
- f. Campus hygiene

#### **IV. Processing of Data Collection as per the template**

- a. Development of questionnaire format to identify all water/energy using fixtures/ equipment and examine water or energy use patterns for individual buildings in the campus.
- b. Collection of secondary data from compilation of electricity bills, collecting records of pumps, generators, water quality analysis reports, civil and electrical etc.
- c. Semi-structured interview with maintenance manager, technicians, plumber and housekeeping staff on current situation and the past trends in water consumption, electricity consumption, waste management, waste generation etc.

#### **V. Data Processing and analysis**

The existing trends and patterns in water usage, energy usage and waste generation and management is analyzed in this step from the data collected from the previous step.

#### **VI. Audit Recommendations and Reporting**

Recommendation – On the basis of results of data analysis and observations, some steps for reducing power and water consumption were recommended. Proper treatments for waste were also suggested. Use of fossil fuels has to be reduced for the sake of community health.

## **CHAPTER III**

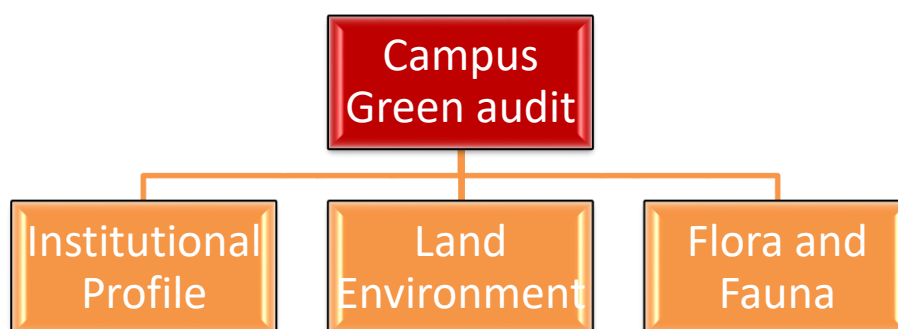
### **METHODOLOGY**

#### **3.1 Campus Green Audit Methods**

The Campus Green Audit is an exercise that ensure the extent of implementation green policies adopted by the institution. The methodologies for the green audit are as follows:

1. Preparation of Campus Green Audit questionnaire based on the objectives
2. Constitution of Campus Green Audit Team with staff and students for each module
3. Data Collection:
  - a. Primary Data collection for each module by respective teams
  - b. Secondary Data collection by the team members
  - c. Collection of samples, observation, interviews and discussion with various staff members
  - d. Steps in primary and secondary data collection

#### **3.2 Green Audit Components**



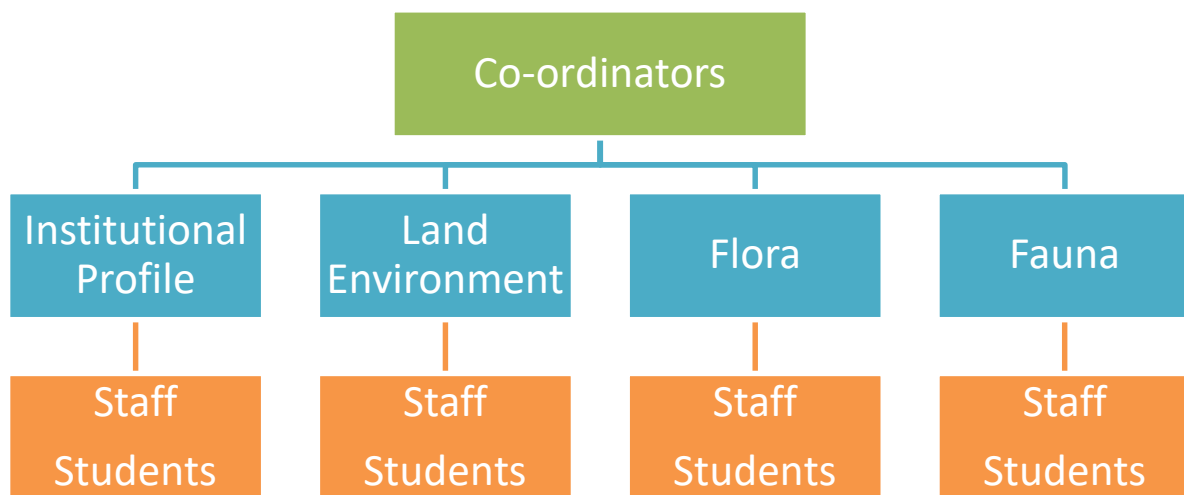
**Fig. 8: Green Audit Components**

## CHAPTER IV

### AUDIT STAGE

The Campus Green Audit (CGA) was carried out by the Post Graduate and Research Department of Environmental Sciences, Bishop Heber College (Autonomous), Tiruchirappalli, Tamilnadu. The CGA team constituted by the management during the pre-audit has done extensive data collection covering all the modules of green audit. The Campus Green Audit team comprises of Co-ordinators, Staff in-charge for each module and student volunteers.

#### 4.1 Green Audit Team



**Fig. 9: Campus Green Audit Team**

## Campus Green Audit Team: 2020-2021 - Assessment Team

### Coordinators

S.No.	Name	Designation	Department	Aspect
1.	Dr.S.Porchelvi	Asst. Professor	Physics	Team Head
2.	M.N.Jothi	Asst. Professor	Physics	Air & Noise
3.	G.Jeyajothi	Asst. Professor	Physics	Water
4.	D.Priya Darshini	Asst. Professor	Chemistry	Wastewater
5.	S.Priyanka	Asst. Professor	Chemistry	Solid & E-Waste
6.	R.K.Kowsalya	Asst. Professor	Chemistry	Flora and Fauna
7.	R.Rani	Asst. Professor	Mathematics	Land
8.	S.Sridevi	Asst. Professor	Physics	Campus Hygiene

### Air and Noise Team

<b>I</b>	<b>Environmental Aspects</b>	<b>Air and Noise</b>
	Name of the coordinator	M. N. Jothi
	Designation and Department	Assistant professor, physics

### Audit Team –Students /Scholars

S.No	Name of The Students	Class	Department
1.	E.Sowmiya	II.M.SC	Physics
2.	S.Pandi Selvi	II.M.SC	Physics
3.	P.Kavibharathi	III.B.SC	Physics
4.	S.Karthiyayeni	III.B.SC	Physics

### Water Audit Team

<b>II</b>	<b>Environmental Aspects</b>	<b>Water</b>
	Name of the coordinator	G.JeyaJothi
	Designation and Department	Assistant professor, physics

### Audit Team –Students /Scholars

S.No	Name of The Students	Class	Department
1.	V.Hema	I.M.SC	Physics

2.	C.Vinothini	I.M.SC	Physics
3.	R.Vasanthi	III.B.SC	Physics
4.	M.madhubala	III.B.SC	Physics

**Waste Water Audit Team**

<b>III</b>	<b>Environmental Aspects</b>	<b>Wastewater</b>
	Name of the coordinator	D.Priya Darshini
	Designation and Department	Assistant professor, Chemistry

**Audit Team –Students /Scholars**

<b>S.No</b>	<b>Name of The Students</b>	<b>Class</b>	<b>Department</b>
1.	S.Pradeepa	II.M.SC	Chemistry
2.	K.Dhaarani	II.M.SC	Chemistry
3.	M.Shobana	III.B.SC	Chemistry
4.	J.Jeyaprabha	III.B.SC	Chemistry

**Solid and E Waste Audit Team**

<b>IV</b>	<b>Environmental Aspects</b>	<b>Solid Waste and E Waste</b>
	Name of the coordinator	S.Priyanka
	Designation and Department	Assistant professor, Chemistry

**Audit Team –Students /Scholars**

<b>S.No</b>	<b>Name of The Students</b>	<b>Class</b>	<b>Department</b>
1.	R.Dharanisri	II.M.SC	Chemistry
2.	P.Inbalakshmi	II.M.SC	Chemistry
3.	G.Pavithra	III.B.SC	Chemistry
4.	R.Subiksha	III.B.SC	Chemistry

**Flora and Fauna Audit Team**

<b>V</b>	<b>Environmental Aspects</b>	<b>Flora and Fauna</b>
	Name of the coordinator	R.K.Kowsalya
	Designation and Department	Assistant professor, Chemistry

**Audit Team –Students /Scholars**

<b>S.No</b>	<b>Name of The Students</b>	<b>Class</b>	<b>Department</b>
1.	R.Dharanisri	II.M.SC	Chemistry
2.	P.Inbalakshmi	II.M.SC	Chemistry



3.	G.Pavithra	III.B.SC	Chemistry
4.	R.Subiksha	III.B.SC	Chemistry

**Land Team**

<b>VI</b>	<b>Environmental Aspects</b>	<b>Land</b>
	Name of the coordinator	R.Rani
	Designation and Department	Assistant Professor, Mathematics

**Audit Team –Students /Scholars**

<b>S.No</b>	<b>Name of The Students</b>	<b>Class</b>	<b>Department</b>
1.	A.SUHASHINI	II.M.SC	Mathematics
2.	A.SUBASHINI	II.M.SC	Mathematics
3.	AISHWARYA DEVI	III.B.SC	Mathematics
4.	S.SRIRANJANI	III.B.SC	Mathematics

**Campus Hygiene Audit Team**

<b>VII</b>	<b>Environmental Aspects</b>	Hygiene
	Name of the coordinator	S.Sridevi
	Designation and Department	Assistant professor, Physics

**Audit Team –Students /Scholars**

<b>S.No</b>	<b>Name of The Students</b>	<b>Class</b>	<b>Department</b>
1.	D.Bharathi	I.M.SC	Physics
2.	B.Pavithra	I.M.SC	Physics
3.	S.Narmatha	III.B.SC	Physics
4.	V.Aarthi	III.B.SC	Physics

## CHAPTER 5

### Institutional Profile

Sakthi College, functions in single shift during the day time. The College has a total strength of **1158** students and staff. The details are given in Table 5.1

**Table 1: Total Population of the College (2019 – 2020)**

Category	Total
Students	1088
Teaching and Non-Teaching Staff	60
Others (housekeeping, Security and support Staff)	10
<b>Total</b>	<b>1158</b>

**Table 2: Student's Strength**

Year	Students	Total
<b>2020 – 2021</b>	UG, PG & Research Scholars	1158

**Table 3: Staff Strength**

Year	Teaching	Non-Teaching	Others	Total (A+B+C)
	(A)	(B)	(C)	
<b>2020 – 21</b>	<b>50</b>	<b>10</b>	<b>10</b>	<b>70</b>

**Table 4: Summary of Students and Staff**

Year	Students & Scholars	Staff			Total
		Teaching	Non-Teaching	Others	
<b>2020 – 21</b>	1088	50	10	10	1158
Total	1088	50	10	10	1158

### Fig. 10: Buildings



Fig. 10.1: Academic Buildings



Fig. 10.2: View of all Buildings



Fig. 10.3: Academic Buildings



Fig. 10.4: Class Room



Fig. 10.5: Play Ground



Fig. 10.6: Library



Fig. 10.7: Class Room



Fig. 10.8: Auditorium



Fig. 10.9: Hostels



Fig. 10.10: Play Ground

## CHAPTER 6

### LAND AUDIT

Sakthi College of Arts and Science for Women, Oddanchatram has a total land holding of 5.74 acres, of which approximately 33 % of the total area is under green cover. The College is located in a plain flat terrain with green cover augmenting the aesthetic value of the college.

#### 6.1 Land Use pattern

The campus has a total area of 5.74 acres (23217.19 Sq.). The Land Use attributes were identified as Built-up / constructed area (6349.00) playground area (9271.00), plantation/open space/garden/green cover (7597.00). The campus has a good road network, Sacred Garden with a family temple, plantation near the hostel area, nice landscape with garden, avenue trees on either side of the road and green cover with trees, shrubs, herbs ornamental plants, interspersed with grass cover.

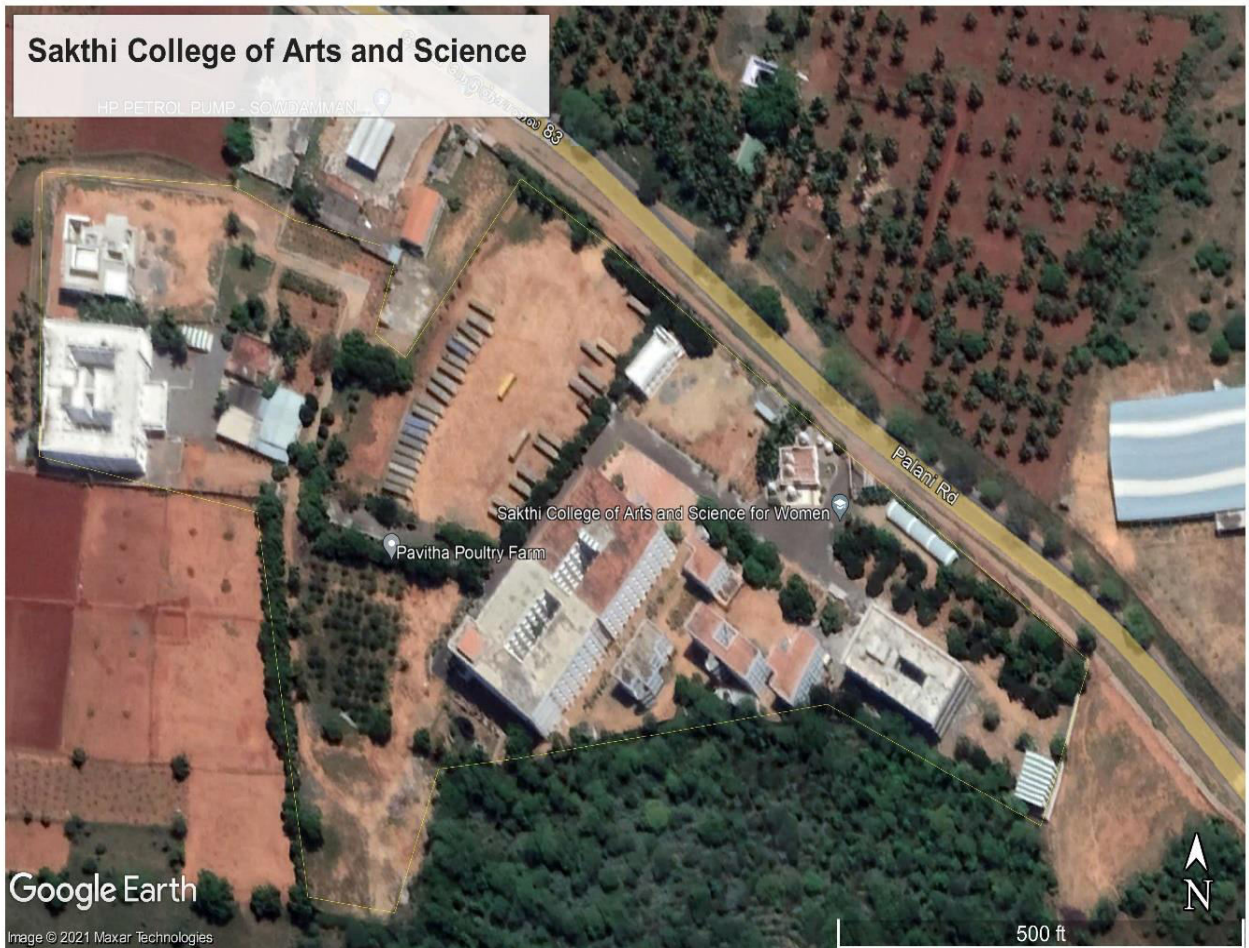
**Table 5: Land Use at a Glance**

S. No.	Aspects	:	Acres	Sq. M
1.	Total Land area	:	5.74	23217.19
2.	Play Ground area	:	2.29	9271.00
3.	Plantation / Green area / Open space	:	1.90	7597.00
4.	Built-up / Constructed Area	:	1.57	6349.00
5.	Terrain of the Campus	:	Undulating / Partially Rocky	

**Table 6: Land Use Data**

S. No.	Categories of Land Use	Acres	Sq. M
<b>1</b>	Play Ground Area	2.28	9271.00
<b>2</b>	Plantation / Green area / Open space	1.90	7597.00
<b>3</b>	Built-up / Constructed Area	1.56	6349.19
		5.74	23217.19

## 6.2 Layout of the campus

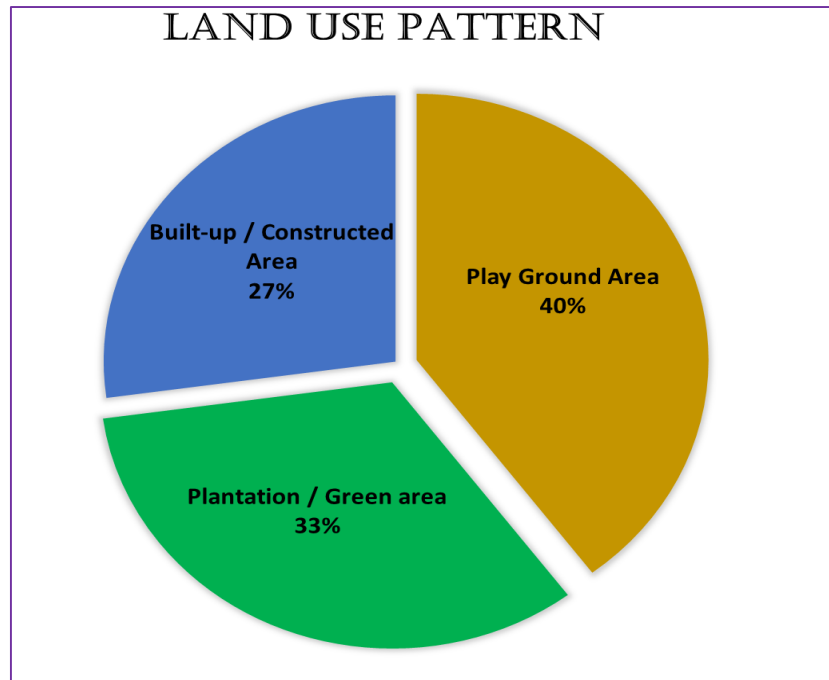


**Fig. 11: Campus Layout**

### TOTAL GREEN COVER

**Table 7: Green Cover**

Land Use Category	Acre
Plantation / Green area / Open	1.90



**Fig 12: Land Use Pattern showing Green Cover**

### 6.3 Observation and Comments

- 1 The land use attributes include built-up area, playground area, sacred temple garden, plantation, green cover, open space, road network and storm water drains.
- 2 The campus has a **green cover** of 1.90 acres which include avenue trees, plantation near the hostel (5915 Sq. M), garden with green cover (1682 Sq. M), sacred garden with a temple (670 Sq. M).
- 3 The campus has a total **built up area** of 1.57 acres i.e., 6349.00 Sq. M. 6 buildings meant for academics (2722.19 Sq. M), hostels (1500 Sq. M), guest house (611.00), cafeteria (112 Sq. M).

- 4 The **playground area** constitutes 2.29 acres i.e., 9271.00 Sq. M. There are two play grounds, Ground 1 is a small Volley ball court with an area of 1509 Sq. M and Ground 2 is the main ground with an area of 7762 Sq. M.
- 5 As per the National Forest Policy, 1988 and the new draft National Forest Policy minimum of **one-third** (or **33%**) of **total land area of India** should be under forest cover (fc) or tree cover (tc).
- 6 The campus complies with the National Forest Policy 1988, and has **33%** green cover with avenue trees, plantation and gardens. The terrain of the campus is undulating and partially rocky, the soil erosion is under control with the planned layout.
- 7 This implies that the campus has the considerable carbon sequestration potential and stands as a model institution.



## CHAPTER 7

### CAMPUS BIODIVERSITY

The natural landscape of the University campus includes green vegetation, tree canopy cover, small lentic system and artificial rain water harvesting pond provides a unique environmental setting conducive for a wide range of floral and faunal diversity. Totally 174 species of plants are present in the College campus. The particulars of floral diversity are given in the following Tables and Figures:

#### 7.1 Assessment of Flora

**Table 8: Floral Species in the Campus**

S.No	Common name	Family name	Botanical name	Uses
01	Dyer's oleander	Apocynaceae	<i>Wrightia tinctoria</i> (Roxb.) R.Br	The flowers, leaves, fruits and seeds are edible. tinctoria is the most commonly prescribed Siddha herbal medication for skin diseases, in specific psoriasis.
02	Aloe	Asphodelaceae	<i>Aloe vera</i> (L.) Burm.f.	Gastroesophageal reflux disease (GERD) is a digestive disorder that often results in heartburn.  Aloe vera extract as a cosmetic or topical drug.  relief of constipation
03	Indian shot / Canna lily	Cannaceae	<i>Canna indica</i> L.,	The tubers can be eaten raw or cooked. the leaves are used to wrap pastries (tamales, humitas, quimbolitos, juanes, etc.). Rhizomes for starch extraction
04	Hibiscus/ China rose	Malvaceae	<i>Hibiscus rosa-sinensis</i> L.,	The flowers of Hibiscus rosa-sinensis are edible and are used in salads. the flower is additionally used

				in hair care as a preparation. flowers are dried to use in a beverage, usually tea.
05	Pomegranate	Lythraceae	<i>Punica granatum</i> L.,	The pomegranate has been used in natural and holistic medicine to treat sore throats, coughs, urinary infections, digestive disorders, skin disorders, arthritis, and to expel tapeworms.
06	Malabar plum	Myrtaceae	<i>Syzygium cumini</i> (L.) Skeels.	The bark is acrid, sweet, digestive, astringent to the bowels, anthelmintic and used for the treatment of sore throat, bronchitis, asthma, thirst, biliousness, dysentery, Diabetic and ulcers. It is also a good blood purifier.
07	Trumpet tree	Bignoniaceae	<i>Tabebuia aurea</i> Benth. & Hook.f.	Antimicrobial, for treatment of fever, syphilis, malaria, trypanosomiasis, stomach and bladder disorders, and for tumors.
08	Copperpod, yellow-flamboyant	Fabaceae	<i>Peltophorum pterocarpum</i> (DC.) K. Heyne	The wood has a wide variety of uses, including cabinet-making and the foliage is used as a fodder crop. The treatment of several ailments like stomatitis, insomnia, skin troubles, constipation, ringworm, insomnia, dysentery, muscular pains, sores, and skin disorders.
09	Butterfly tree	Fabaceae	<i>Bauhinia purpurea</i> L.,	Traditional medicine systems to cure various diseases. This plant has been known to possess antibacterial, antidiabetic, analgesic, anti-inflammatory, anti-diarrheal, anticancerous, nephroprotective and thyroid hormone regulating

				activity.
10	Indian cork tree/ tree jasmine	Bignoniaceae	<i>Millingtonia hortensis</i> L.f.	The leaves are used as antipyretic, sinusitis, cholagogue and tonic in folklore medicine. Used as a yellow dyes. Flower buds are used in the treatment of asthma, sinusitis, cholagogue and tonic. The flowers are used in rituals.
11	Scarlet cordia/ Geiger tree	Boraginaceae	<i>Cordia sebestena</i> L.,	It is used in traditional medicine for the treatment of gastrointestinal disorders. In this study, we investigated the chemical composition, antibacterial potential,
14	Fig	Moraceae	<i>Ficus hispida</i> L.,	Traditionally, different parts of the plant have been used in the treatment of ulcers, psoriasis, anemia, piles jaundice, vitiligo, hemorrhage, diabetes, convulsion, hepatitis, dysentery, biliousness, and as lactagogue and purgative.
15	Spanish cherry/ bullet wood	Sapotaceae	<i>Mimusops elengi</i> L.,	The roots are used as diuretic, astringent, cardi tonic and stomachic. Flowers are used as an expectorant and in liver complaints and asthma. <i>Mimusops elengi</i> bark showed antiulcer activity. It is also used to prepare lotion for wounds and ulcers; dried powder is a brain tonic and is useful to relieve cephalagia.
16	White champaca	Magnoliaceae	<i>Magnolia alba</i> (DC.) Figlar	It is widely cultivated as an ornamental in Asia, particularly tropical and subtropical regions of China and Southeast Asia for the strongly fragrant

				flowers
17	Indian beech/ Pongame oil tree	Fabaceae	<i>Millettia pinnata</i> (L.) Panigrahi  <i>Pongamia pinnata</i> L.,	Its crude drug for the treatment of tumors, piles, skin diseases, and ulcers. The root is effective for treating gonorrhoea, cleaning gums, teeth, and ulcers, and is used in vaginal and skin diseases.
18	Jackfruit Tree	Moraceae	<i>Artocarpus heterophyllus</i> Lam.	Its decoction and latex are used in the treatment of asthma, prevent ringworm infection, and heal cracking of the feet. The infusion of mature leaves and bark is supposed to be effective in the treatment of diabetes, gall stones and relieve asthma. Jackfruit may be higher in some vitamins and minerals
19	Indian almond, Malabar almond	Combretaceae	<i>Terminalia catappa</i> L.,	Treatment of inflammation diseases, wound healing, allergies, skin related problems, asthma, ulcer, diarrhea, cardiovascular diseases. Seed - raw or cooked. The fruits have a tender skin and a thin layer of subacid juicy flesh.
20	Purple allamanda	Apocynaceae	<i>Allamanda blanchetii</i> A.DC.	Treating malaria, jaundice, cough, wounds and constipation, but also shows activity against leukemia and human carcinomamia.
21	Foxtail palm	Areaceae	<i>Wodyetia bifurcate</i> A.K.Irvine	It is a plant of a very high ornamental. the nectarine flesh of the fruit to be edible, although rather flavourless not sweet, but slightly acid.  <i>Caution:</i> A blog by a veterinarian reported possible toxicity of fruit to a dog. However, the

				possibility of the fruit being a cicad was raised. Seeds used for making Bodhi beads.
22	Teak	Lamiaceae	<i>Tectona grandis</i> L.f.	Teak's high oil content, high tensile strength and tight grain make it particularly suitable where weather resistance is desired. It is used in the manufacture of outdoor furniture and boat decks. It is also used for cutting boards, indoor flooring, countertops and as a veneer for indoor finishings.
23	Pinwheel flower/ crape jasmine	Apocynaceae	<i>Tabernaemontana divaricate</i> R.Br.	the traditional folklore medicinal benefits such as an anti-epileptic, anti-mania, brain tonic, and anti-oxidant. The aim of the present study was to evaluate the effect of ethanolic extract of TD leaves on burying behavior in mice.
	American mahogany	Meliaceae	<i>Swietenia mahagoni</i> (L.) Jacq.	Traditionally it uses for malaria, hypertension, diabetes and diarrhea, as antipyretic, as bitter tonic and astringent. It is taken orally as a decoction for diarrhoea and dysentery, as a source of vitamins and iron, and as a medicine to induce haemorrhage.
24	Vetiver	Poaceae	<i>Chrysopogon zizanioides</i> (L.) Roberty	Vetiver for nerve and circulation problems and for stomach pain. Some women take vetiver to start their periods or to cause an abortion.applied directly to the skin for relieving stress, as well as for emotional traumas and shock, lice, and repelling insects. It is also used for arthritis,

				stings, and burns. aromatherapy for nervousness, insomnia, and joint and muscle pain.
25	African tulip tree	Bignoniaceae	<i>Spathodea companulata</i> P.Beauv.	used for epilepsy and convulsion control, against kidney disease, urethritis, and as antidote against animal poisons
26	Great bougainvillea	Nyctaginaceae	<i>Bougainvillea spectabilis</i> Willd.	The aqueous extract and decoction have been used as fertility control among the tribal people. to possess anticancer, antidiabetic, antihepatotoxic, anti-inflammatory, antihyperlipidemic, antimicrobial, antioxidant, and antiulcer properties.
27	Wild date palm	Areaceae	<i>Phoenix sylvestris</i> (L.) Roxb.,	The fruit serves as a tonic and restorative, and is also used as an analgesic to mitigate pain from backache and in the buttocks. In addition, it is widely used as an aphrodisiac, sweetener and diuretic and in the treatment of vomiting, vertigo and unconsciousness.
28	Parijat	Nyctaginaceae	<i>Nictanthes arbor-tristis</i> L.,	this plant are anti-helminthic and anti-pyretic besides its use as a laxative, in rheumatism, skin ailments and as a sedative. Dried fruits are taken orally to get relief from cough; decoction of dried flower is given with jaggery as an antifertility agent in females; leaf juice is applied externally on ringworm and other skin diseases. ‘Lupin’ is a medicine used for pain and inflammation associated

				with musculoskeletal and joint disorders.
29	Butterfly Pea / Sangu poo	Fabaceae	<i>Clitoria ternatea</i> L.,	Memory enhancer, nootropic, antistress, anxiolytic, antidepressant, anticonvulsant, tranquilizing and sedative agent. beneficial effects for asthmatics. anti-asthmatic effects.
30	Curry tree	Rutaceae	<i>Marraya koenigii</i> (L.) Sprengel	Traditionally as a stimulant and for management of diabetes. The leaves are eaten to treat diarrhoea and dysentery. A leaf infusion is drunk to stop vomiting and to treat fever. A poultice of the leaves is applied to skin eruptions and bruises.
31	Minnie root/ fever root	Acanthaceae	<i>Ruellia tuberosa</i> L.,	Cracker plant is traditionally used as diuretic, anti-pyretic, analgesic, anti-hypertensive, anthelmintic, abortifacient, emetic, in bladder disease, kidney disorder, bronchitis, gonorrhoea and syphilis.
32	Sacred pepper	Piperaceae	<i>Piper auritum</i> Kunth	Young leaves - occasionally cooked and eaten as greens. The leaves become limp as soon as they are picked. The leaves have the flavour and aroma of sarsaparilla. They are used as a flavouring in soups and other dishes. The leaves are wrapped around tamale dough before it is packed in corn leaves and steamed.
33	Sago palm	Cycadaceae	<i>Cycas revolute</i> Thunb.	Despite known toxicities, Cycad stems and seeds are used for high blood

				pressure, headaches, congestion, rheumatism and bone pain. Leaves used in the treatment of cancer and hepatoma. Terminal shoots used as astringent and diuretic.
34	Nerium / arali	Apocynaceae	<i>Nerium oleander</i> L.,	Despite the danger, oleander seeds and leaves are used to make medicine. Oleander is used for heart conditions, asthma, epilepsy, cancer, painful menstrual periods, leprosy, malaria, ringworm, indigestion, and venereal disease; and to cause abortions.
35	Caterpillar tree	Apocynaceae	<i>Plumeria alba</i> L.,	It is often cultivated as an ornamental plant. In Cambodia pagodas especially choose this shrub, with the flowers used in ritual offerings to the deities, they are sometimes used to make necklaces which decorate coffins. In addition, the flowers are edible and eaten as fritters, while the heart of the wood is part of a traditional medical preparation taken as a vermifuge or as a laxative.
36	Trumpet vine	Bignoniaceae	<i>Tecoma stans</i> (L.) Juss. ex Kunth	Its provides firewood and charcoal. The wood is used in the construction of buildings and the leaf infusion can be taken orally for diabetes and stomach pains; a strong leaf and root decoction is taken orally as a diuretic, to treat syphilis or for intestinal worms.
37	Hybrid tea rose	Rosaceae	<i>Rosa hybrid</i> L.,	Edible roses have been identified as a potential source of antioxidant



				compounds promoting human health.
38	Coconut	Areaceae	<i>Cocos nicifera</i> L.,	Rose water is fragrant, a mild natural fragrance as an alternative to chemical-filled perfumes. Rose water is its strong anti-inflammatory properties. eczema or rosacea.
39	Flame of the woods	Rubiaceae	<i>Ixora coccinea</i> L.,	The flowers, leaves, roots, and the stem are used to treat various ailments in folk medicines. juice leaves and the fruit. for dysentery, ulcers and gonorrhoea.
40	Roxburgh fig	Moraceae	<i>Ficus auriculata</i> Lour.	Roasted figs are taken for diarrhea and dysentery. Root latex is used in mumps, cholera, diarrhea and vomiting. use the leaf for the treatment of diabetes.
41	Royal palm	Areaceae	<i>Roystonea regia</i> (Kunth) O.F.Cook	Ornamental. The seed is used as a source of oil and for livestock feed. Leaves are used for thatching and the wood for construction.
42	Vilvum/ wood apple	Rutaceae	<i>Aegle marmelos</i> (L.) Correa	It is anti-inflammatory in nature. Its extracts when applied on the exposed area, help to cure inflammation. Aegle Marmelos leaf juice with honey can prove useful for treating fever. Aegle Marmelos can be used to treat tuberculosis.
43	Flamboyant Tree	Fabaceae	<i>Delonix regia</i> (Boj. ex Hook.)	The leaves used to treat constipation, inflammation, arthritis and hemiplegia. The leaves were also used in rheumatism and as purgatives. mature seeds of this plant are eaten. Antinutritional compounds such as tannins, saponins

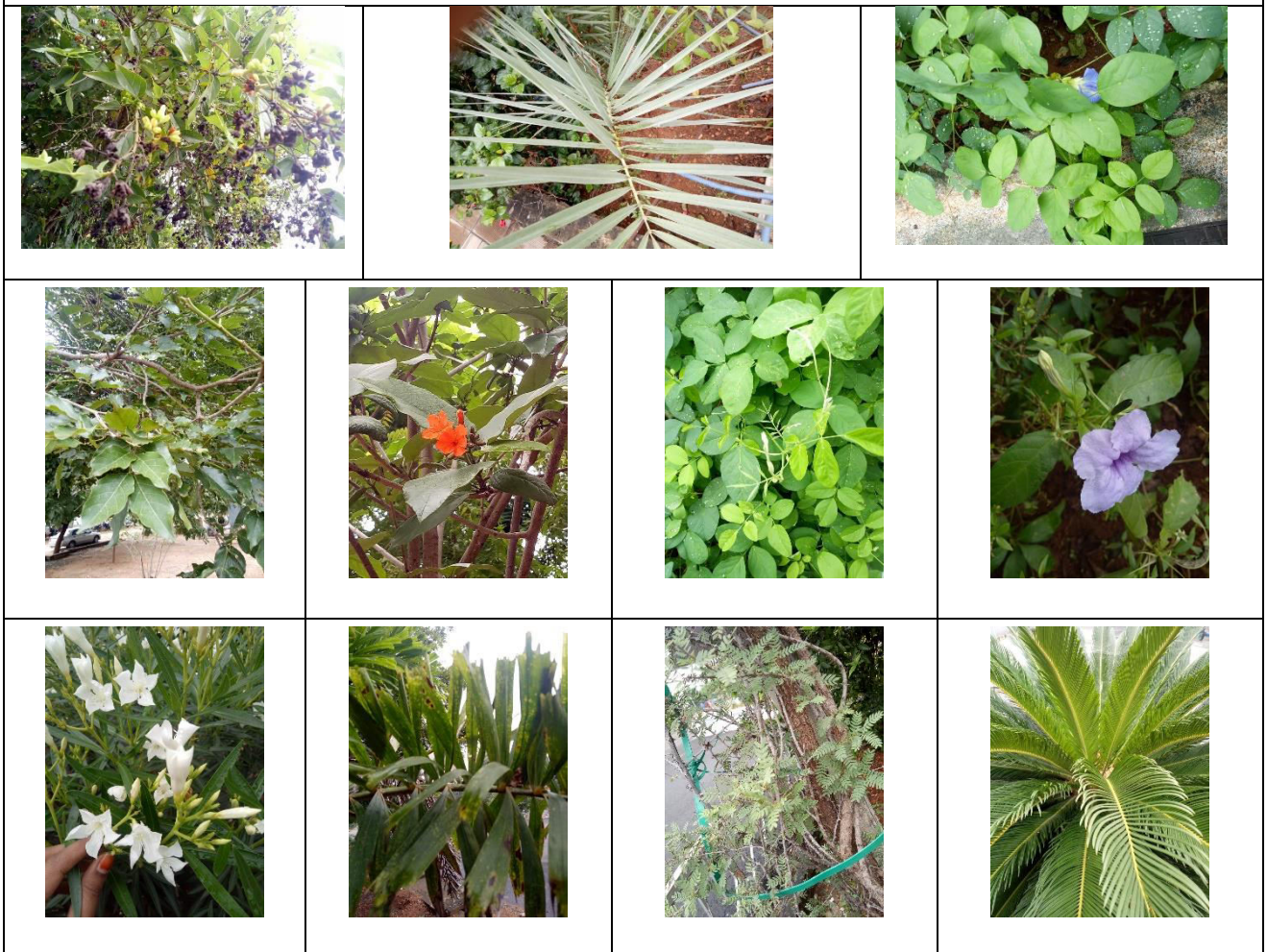
				and oxalates.
44	Dendulang	Fabaceae	<i>Dendrolobium umbellatum</i> (L.) Benth.	<i>Edible Plant:</i> Leaves Food (Fruit and Vegetable: The young leaves are sometimes eaten as a vegetable or used as a seasoning. Herb and Spice) <i>Medicinal:</i> It is used medicinally for treating gonorrhoea, irregular menstruation, scaly skin, childbirth medicine, as a general tonic. The plant is also used for cattle fodder.
45	Powder puff flower	Fabaceae	<i>Calliandra haematocephala</i> Hassk.	Roots used in the treatment of hemorrhoids. Leaf and root used for measles. decoction of the flowers used as blood purifier and tonic. flower, leaf, and bark used for its tranquilizing effect. astroprotective effects in acute gastric lesions induced

**Fig. 13: Flora in the Campus**



**Briefing on Floral Audit by Dr. Anand Gideon**

**Flora in the Campus**





*Wrightia tinctoria*  
APOCYNACEAE



*Aloe vera*  
ASPHODEACEAE



*Canna indica*  
CANNACEAE



*Hibiscus rosa-sinensis*  
MALVACEAE



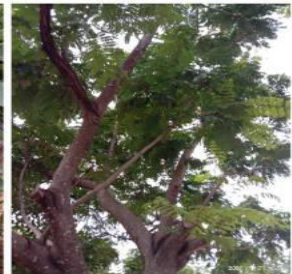
*Punica granatum*  
LYTHRACEAE



*Syzygium cumini*  
MYRTACEAE



*Tabebuia aurea*  
BIGNONIACEAE



*Peltophorum pterocarpum*  
FABACEAE



*Bauhinia purpurea*  
FABACEAE



*Millingtonia hortensis*  
BIGNONIACEAE



*Hibiscus rosa-sinensis*  
MALVACEAE



*Ficus hispida*  
MORACEAE



*Mimusops elengi*  
SAPOTACEAE



*Magnolia alba*  
MAGNOLIACEAE



*Millettia pinnata*  
FABACEAE



*Artocarpus heterophyllus*  
MORACEAE



*Terminalia catappa*  
COMBRETACEAE



*Allamanda blanchetii*  
APOCYNACEAE



*Wodyetia bifurcata*  
ARECACEAE



*Tectona grandis*  
FABACEAE



*Tabernaemontana divaricata*  
APOCYNACEAE



*Swietenia mahagoni*  
MELIACEAE



*Chrysopogon zizanioides*  
POACEAE



*Spathodea companionata*  
BIGNONIACEAE



*Bougainvillea spectabilis*  
NYCTAGINACEAE



*Phoenix sylvestris*  
ARECACEAE



*Nyctanthes arbor-tristis*  
NYCTAGINACEAE



*Clitoria ternatea*  
FABACEAE



*Murraya koenigii*  
RUTACEAE



*Ruellia tuberosa*  
ACANTHACEAE



*Piper auritum*  
PIPERACEAE



*Cycas revoluta*  
CYCADACEAE



*Nerium oleander*  
APOCYNACEAE



*Plumeria alba*  
APOCYNACEAE



*Tecoma stans*  
BIGNONIACEAE



*Rosa hybrida*  
ROSACEAE



*Cocos nucifera*  
ARECACEAE



*Ixora coccinea*  
RUBIACEAE

## 7.2 Green Cover in the Campus

The campus has a green area of 33% which fulfills the norms of green area recommended by the National Forest Policy of India, 1988 and is well within the limits.

## 7.3 Tools to Measure Carbon Absorption

### 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 km. covered by a car per litre of petrol is 20 km

## 5. Total quantity of petrol consumed by the car (41,843/20) = 2092L

### 7.4 Observation and Comments

- 1 The campus has 27 fully grown trees, the carbon emitted by a car due to consumption of 1 litre of petrol is 2.3 kg CO<sub>2</sub>.
- 2 At this rate the total quantity of carbon emitted by 2092 litres of petrol (2092 × 2.3 kg) = 4812 kg CO<sub>2</sub> or 4.8 tonnes of CO<sub>2</sub>.
- 3 Therefore, the carbon absorption of **one full-grown tree is 4812/27 178.22 kg CO<sub>2</sub>.**

The footprint calculation is based on

The standard unit of 1 litre petrol = 2.3 kgCO<sub>2</sub>.

### 7.5 Carbon absorption by flora in the Institution

Carbon absorption capacity of one full-grown tree = 178.22 kg CO<sub>2</sub>.

1. Therefore the carbon absorption capacity of 27 full-grown trees in the Campus of the Institution (27 × 178.22 kg CO<sub>2</sub>) = **4811.94 kg of CO<sub>2</sub>.**

### 7.6 ASSESSMENT OF FAUNA

The animal life of an area is dependent upon the vegetation and there are countless relationships between the species composing an animal community. Fauna assessment involves more problems than flora assessment by virtue of the greater variety of animal types, their mobility and behavior. Faunal assessment provides a basis for determining relative abundance and evaluating commonness or rarity of each species encountered.

In the college campus, the animal survey was conducted along with the plants. The study includes surveys of the animal communities such as aquatic organisms, insects, molluscs, reptiles, fishes, amphibians, birds and

mammals. The details of fauna found in campus are given in the following tables:

**Table 9: Diversity of Fauna**

S. No.	Faunal Group	No. of Species
<b>INVERTEBRATA</b>		
<b>1</b>	Annelida	<b>2</b>
<b>2</b>	Arthropoda	
	a. Butterfly	<b>11</b>
	b. Ants	<b>07</b>
	c. Spiders	<b>04</b>
<b>3</b>	Mollusca	<b>03</b>
<b>CHORDATA</b>		
<b>4</b>	Fish fingerlings in stagnant pool	<b>School</b>
<b>5</b>	Amphibians	<b>02</b>
<b>6</b>	Reptiles	<b>09</b>
<b>7</b>	Birds	<b>22</b>
<b>8</b>	Mammals	<b>06</b>

**INVERTEBRATA**

**Table 10: PHYLUM: ANNELIDA**

S.NO	Common Name	Scientific Name	Status/schedule
1.	Earth worm	<i>Perithema posthuma</i>	Common
2.	Indian earthworm	<i>Megascolex mauritii</i>	Common

**PHYLUM: ARTHROPODA**

**Table 11: BUTTERFLY**

S.NO	Common Name	Scientific Name	Status/schedule
<b>1.</b>	Plain tiger	<i>Danaus chrysippus</i>	Common
<b>2.</b>	Common tiger	<i>Danaus genutia</i>	Common
<b>3.</b>	Common sailer	<i>Neptis hylas</i>	Common
<b>4.</b>	Common crow	<i>Euploea core</i>	Common
<b>5.</b>	Tawny coster	<i>Acraea violae</i>	Common
<b>6.</b>	One spot grass yellow	<i>Eurema andersoni</i>	Common
<b>7.</b>	Blue tiger	<i>Tirumala limniace</i>	Common



<b>8.</b>	Common emigrant	<i>Catopsilia pomona</i>	Common
<b>9.</b>	Common blue jay	<i>Graphium doson</i>	Common
<b>10.</b>	Common Mormon	<i>Papilio polytes</i>	Common
<b>11.</b>	Lime butterfly	<i>Papilio demoleus</i>	Common

**Table 12: ANT**

<b>S.No.</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status</b>
1.	<i>Fire ant</i>	<i>Solenopsis geminata</i>	Common
2.	<i>Pillayarerumbu/ Samyerumbu</i>	<i>Paratrechina longicornis</i>	Common
3.	<i>Ghost ant</i>	<i>Tapinomame lanocephalum</i>	Common
4.	<i>Carpenter ant</i>	<i>Camponotus angusticollis</i>	Common
5.	<i>Soo Erumbu</i>	<i>Tetrapo nerarufonigra</i>	Common
6.	<i>Yellow crazy ant</i>	<i>Anoplolepis gracilipes</i>	Common
7.	<i>Bug</i>	<i>Probergrothissanuinolens</i>	Common

**Table 13: SPIDER**

<b>S.NO</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status/schedule</b>
1.	Jumping spider	<i>Menemerus fulvus</i>	Common
2.	Grey wall jumper	<i>Menemerus bivittatus</i>	Common
3.	Grass cross spider	<i>Argiope catenulate</i>	Common
4.	Orb weaver spider	<i>Argiope anasuja</i>	Common

**Table 14: PHYLUM: MOLLUSCA**

<b>S.NO</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Status/schedule</b>
1.	Freshwater mussel	<i>Lamellidens marginalis</i>	Common
2.	Apple snail	<i>Pila globosa</i>	Common
3.	Ariophanta	<i>Ariophanta bristrialis</i>	Common

## CHORDATA

### CLASS: PISCES

**Table 15: FISHES: Culture in College Pond**

S.NO	Common Name	Scientific Name	Status/schedule
1.	Fish fingerlings	--	Common

**Table 16: CLASS: AMPHIBIA**

S.NO	Common Name	Scientific Name	Status/schedule
1.	Toad	<i>Bufo</i>	Rare
2.	Frog	<i>Rana hexadactyla</i>	Common

**Table 17: CLASS: REPTILIA**

S.No.	Common Name	Scientific Name	Status/schedule
1.	Calotes	<i>Calotes versicolor</i>	Common
2.	Varanus	<i>Varanus varius</i>	Common
3.	Non poisonous snake	<i>Lycodon aulicus</i>	Common
4.	Cobra	<i>Naja naja</i>	Common
5.	Krait (Kattu viriyan)	<i>Bungarus caeruleus</i>	Common
6.	Rat snake	<i>Ptyas mucosa</i>	Common
7.	Chameleon	<i>Chameleo chameleon</i>	Rare
8.	Green snake	<i>Primeresureus gramineus</i>	Common
9.	Common wall Lizard	<i>Podarcis muralis</i>	Common

**Table 18: CLASS: AVES (BIRDS)**

S.No.	Common Name	Scientific Name	Status/schedule
1.	Brahminy kite	<i>Halioster indus</i>	Least concern
2.	Shikra	<i>Accipiter badius</i>	Least concern
3.	Rock pigeon	<i>Columba livia</i>	Least concern

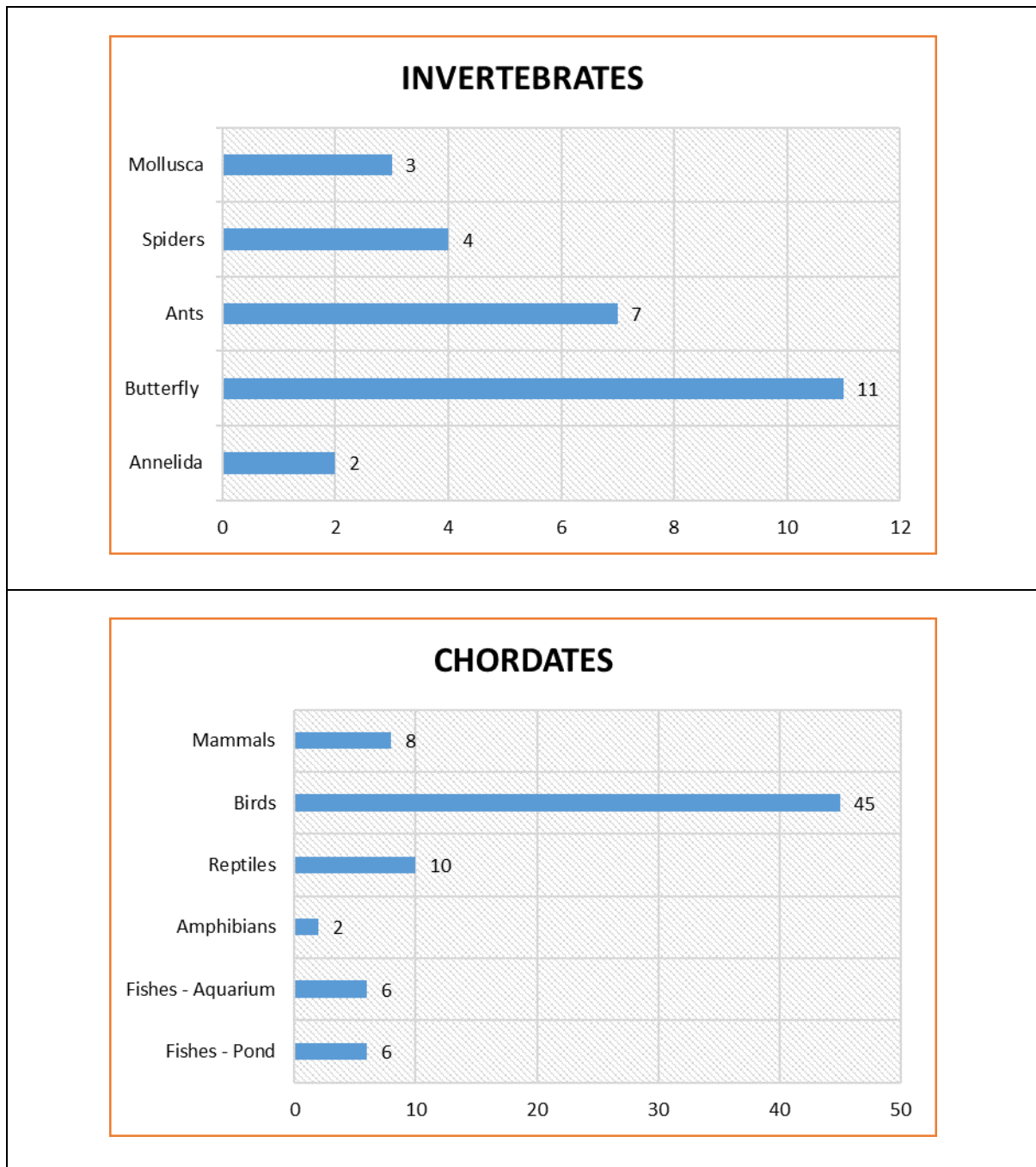
4.	Spotted dove	<i>Spilobelia chinensis</i>	Least concern
5.	Rose ringed Parakeet	<i>Psittakulla krameri</i>	Least concern
6.	Asian koel	<i>Eudymamys scolobaceus</i>	Least concern
7.	Greater Coucal	<i>Centropus sinensis</i>	Least concern
8.	Spotted owlet	<i>Athene brama</i>	Least concern
9.	Little Green Bee Eater	<i>Merops oriental</i>	Least concern
10.	Indian Roller	<i>Coracius benghalensis</i>	Least concern
11.	Hoopoe	<i>Upupa epops</i>	Least concern
12.	Black Drongo	<i>Dierurus macrocerus</i>	Least concern
13.	Common Mynah	<i>Acridotherus tristis</i>	Least concern
14.	House crow	<i>Corvus splendens</i>	Least concern
15.	Treepie	<i>Dendrocitta vagabunda</i>	Least concern
16.	Jungle babbler	<i>Argya striata</i>	Least concern
17.	Indian Robin	<i>Copsichus fulicatus</i>	Least concern
18.	White browed wagtail	<i>Motacilla maderasunbatensis</i>	Least concern
19.	Purple rumped Sunbird	<i>Leptocoma zeylonica</i>	Least concern
20.	House sparrow	<i>Passer domesticus</i>	Least concern
21.	Plain prinia	<i>Prinia inorata</i>	Least concern
22.	Indian Peafowl	<i>Pavo cristatus</i>	Least concern

**Table 19: CLASS: MAMMALIA**

Sl. No.	Common Name	Scientific Name	IUCN status / Schedule
1	Indian palm squirrel	<i>Fumambulus palmarum</i>	Lower risk/III
2	Grey mongoose	<i>Herpestes edwardsii</i>	Lower risk/II
3	Black naped hare	<i>Lepus nigricollis</i>	Lower risk/III
4	Indian gerbils	<i>Tatera indica</i>	Lower risk/III
5	Large bandicoot – rat	<i>Bandicota indica</i>	Lower risk/III
6	House rat	<i>Rattus rattus</i>	Lower risk/III

## 7.7 Observations – Fauna

The fauna observed and recorded in the study area are as follows:



**Fig. 14: Diversity of Fauna**

### **Invertebrates**

The insects in the study area are interrelated with each other and other organisms. Invertebrates recorded in the study site include 11 species

of butterflies, 7 species of ants, 2 species of annelids, 3 species of molluscs, and 4 species of spiders.

### **Chordates**

The chordates include 6 species of mammals, 22 species of birds, 9 species of reptiles, 2 species of amphibians and fish fingerlings in a stagnant pool of water.

### **Amphibians**

The toads and frogs were the amphibians recorded in the study area. Many of them were seen along the wet areas. Totally 2 species of amphibians were recorded in the study sites.

### **Reptiles**

The reptiles recorded in the study area include lizards, and snakes. Totally 9 species of reptiles were recorded in the study sites.

### **Birds**

Birds play an important role in understanding the ecological balance and its interrelationships. Totally 22 species of birds were recorded in the campus.

### **Mammals**

The mammals present in the study area include Mongoose, Indian palm Squirrel, etc. These mammals are spread over the study area. Totally 6 species of mammals were recorded in the campus.

## **CHAPTER 8**

### **CONCLUSION**

#### **8.1 Conclusion**

Green Audit is the most efficient way to identify the strength and weakness of environmental sustainable practices and to find a way to solve problem. Green Audit is one kind of professional approach towards a responsible way in utilizing economic, financial, social and environmental resources. Green audits can “add value” to the management approaches being taken by the college and is a way of identifying, evaluating and managing environmental risks (known and unknown). There is scope for further improvement, particularly in relation to waste, energy and water management. The college in recent years considers the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.

#### **8.2 Observations and Comments**

##### **Land**

- 8 The land use attributes include built-up area, playground area, sacred temple garden, plantation, green cover, open space, road network and storm water drains.
- 9 The campus has a **green cover** of 1.90 acres which include avenue trees, plantation near the hostel (5915 Sq. M), garden with green cover (1682 Sq. M), sacred garden with a temple (670 Sq. M).
- 10 The campus has a total **built up area** of 1.57 acres i.e., 6349.00 Sq. M. 6 buildings meant for academics (2722.19 Sq. M), hostels (1500 Sq. M), guest house (611.00), cafeteria (112 Sq. M).

11 The **playground area** constitutes 2.29 acres i.e., 9271.00 Sq. M. There are two play grounds, Ground 1 is a small Volley ball court with an area of 1509 Sq. M and Ground 2 is the main ground with an area of 7762 Sq. M.

12 This implies that the campus has the considerable carbon sequestration potential and stands as a model institution.

## **Biodiversity**

### **Flora**

1 The campus has a **green cover** of 1.90 acres which include avenue trees, plantation near the hostel (5915 Sq. M), garden with green cover (1682 Sq. M), sacred garden with a temple (670 Sq. M).

2 As per the National Forest Policy, 1988 and the new draft National Forest Policy minimum of **one-third** (or **33%**) of **total land area of India** should be under forest cover (fc) or tree cover (tc).

3 The campus complies with the National Forest Policy 1988, and has **33%** green cover with avenue trees, plantation and gardens. The terrain of the campus is undulating and partially rocky, the soil erosion is under control with the planned layout.

### **Carbon absorption by flora in the Institution**

The campus has 27 fully grown trees, therefore the carbon absorption capacity of 27 full-grown trees in the Campus is  $(27 \times 178.22 \text{ kg CO}_2) =$   
**4811.94 kg of CO<sub>2</sub>.**

## **Fauna**

### **Invertebrates**

The insects in the study area are interrelated with each other and other organisms. Invertebrates recorded in the study site include 11 species of butterflies, 7 species of ants, 2 species of annelids, 3 species of molluscs, and 4 species of spiders.

### **Chordates**

The chordates include 6 species of mammals, 22 species of birds, 9 species of reptiles, 2 species of amphibians and fish fingerlings in a stagnant pool of water.

### **Amphibians**

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### **Birds**

Birds play an important role in understanding the ecological balance and its interrelationships. Totally 22 species of birds were recorded in the campus.

### **Mammals**

The mammals present in the study area include Mongoose, Indian palm Squirrel, etc. These mammals are spread over the study area. Totally 6 species of mammals were recorded in the campus.



## **Comments**

- ❖ The campus complies with the prescribed standards of the National Forest Policy, 1988.
- ❖ The green initiatives of the campus is good and highly appreciated.
- ❖ The Biodiversity in the campus is well maintained through sacred garden, temple with family God and ethically bound students and staff.
- ❖ The vacant land in the campus has a good potential for agricultural activity.

**Fig. 15: Fauna in the Campus**

**ANNELIDS**



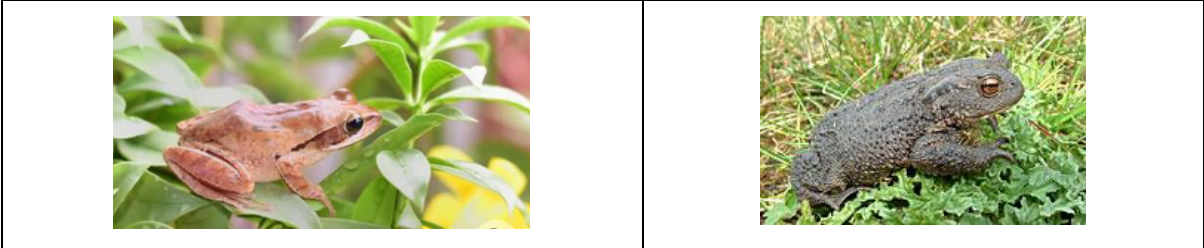
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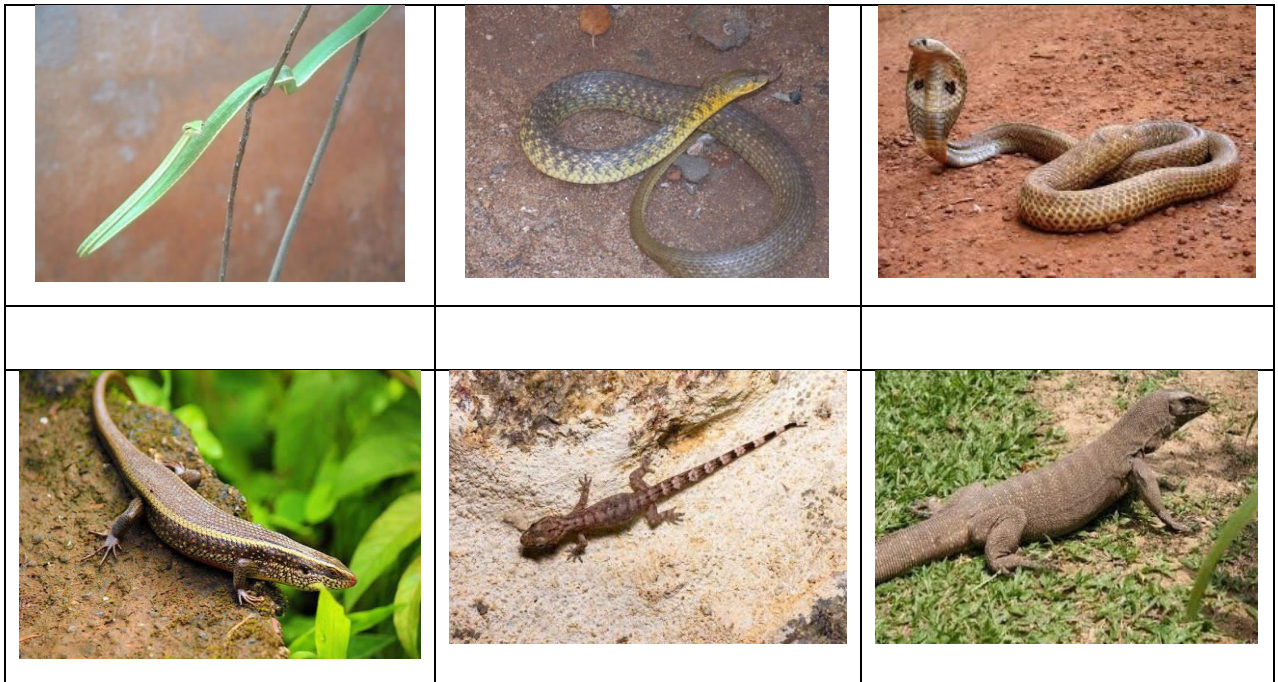
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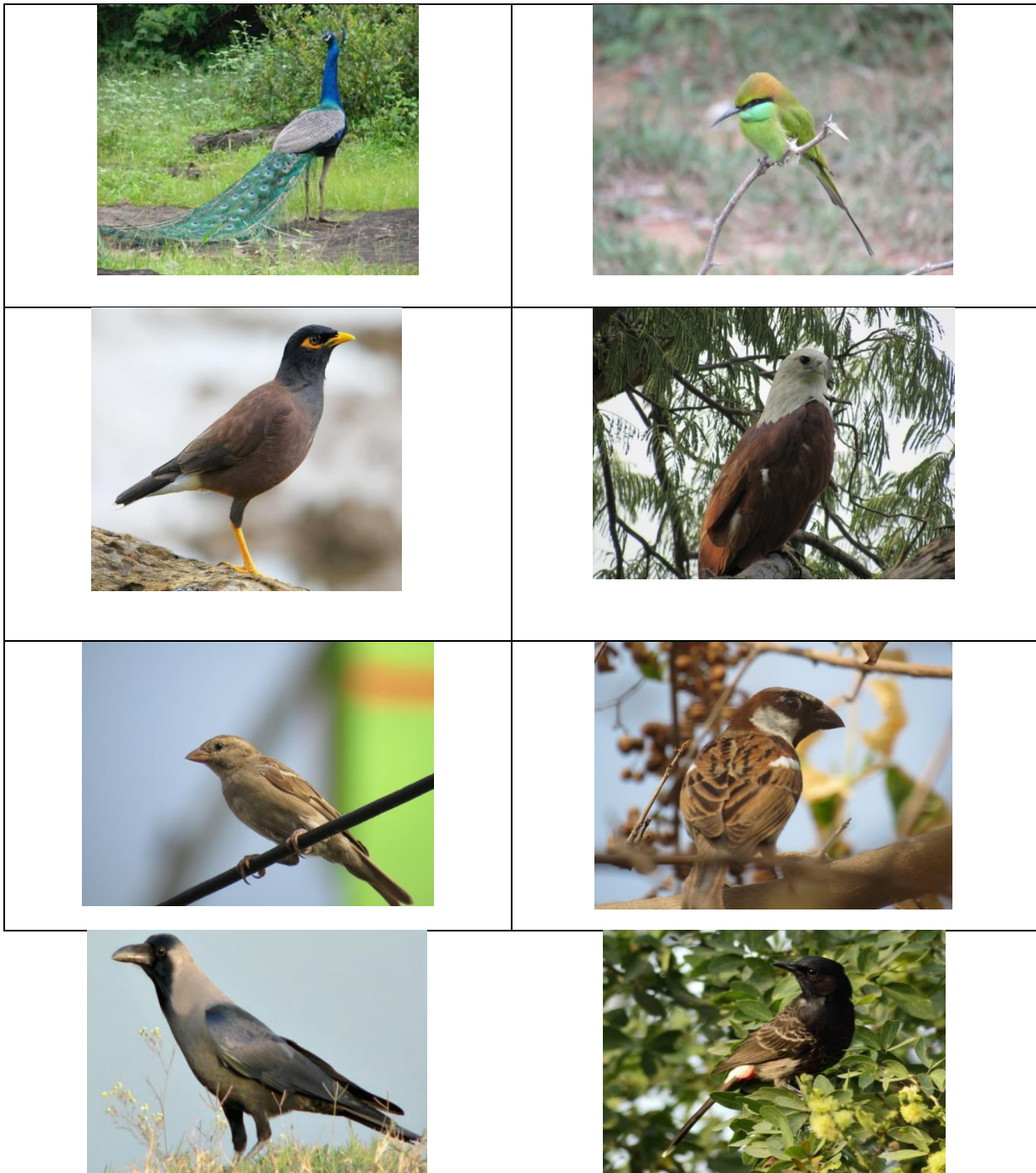
**AMPHIBIANS**



**REPTILES**



# AVES





### MAMMALS



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