

**Govt. Dr. Shyama Prasad Mukherjee
Science & Commerce College, Bhopal**



**Green, Environment & Energy
Audit Report
2021-22**



S. Swinedi
IQAC

Co-ordinator

82
Principal
Govt. Dr. Shyama Prasad
Mukherjee Science & Commerce
P.G. College BHOPAL (M.P.)
Principal



शासकीय डॉ. श्यामा प्रसाद मुखर्जी विज्ञान एवं वाणिज्य महाविद्यालय, भोपाल



संदेश

जलवायु परिवर्तन के आसन्न संकट से हम सभी अवगत हैं। विकास के क्रम और पर्यावरण संरक्षण के बीच संतुलन खोजने में पूरा विश्व आज दुविधाजनक स्थिति से जूझ रहा है। वर्तमान परिदृश्य में हम शासकीय डॉ. श्यामा प्रसाद मुखर्जी विज्ञान एवं वाणिज्य महाविद्यालय भोपाल में विभिन्न गतिविधियों के माध्यम से कार्बन फुटप्रिंट को नियंत्रित कर समाज के प्रति अपने उत्तरदायित्व से अवगत हैं। हम हमेशा परिस्थितिकी बहाली के प्रति सजग हैं जैसा कि महाविद्यालय के विजन से स्पष्ट है। महाविद्यालय ने परिसर के अंदर तथा परिसर के बाहर कई अभियान जैसे महाविद्यालय में वृक्षारोपण तथा ग्राम-गोद-योजना के अन्तर्गत गोद लिये गये गांव में वृक्षारोपण, जागरूकता अभियानों में भागीदारी के साथ पॉलीथीन मुक्त कैम्पस अभियान आयोजित कर पर्यावरण के संरक्षण की पहल की है। इस Green Audit, Energy Audit and Environment Audit का उपयोग एक साधन के रूप में कर महाविद्यालय पर्यावरण संरक्षण की दिशा में बेहतर कार्य करने की दिशा में प्रतिबद्ध है।

मैं, प्राचार्य के रूप में इस आडिट रिपोर्ट को सभी हितधारकों से साझा करते हुए गर्व और प्रसन्नता महसूस करती हूँ। मुझे आशा ही नहीं अपितु पूर्ण विश्वास है कि यह रिपोर्ट न केवल हमारे संस्था बल्कि समाज के विभिन्न वर्गों के लिए मार्गदर्शन का कार्य करेगी।

मैं, डॉ. आर.सी.माहेश्वरी, डीन एकेडेमिक, आई.ई.एस, विश्वविद्यालय, भोपाल तथा अपने महाविद्यालय की टीम को बधाई देती हूँ जिन्होंने इस कार्य के पूर्ण करने में अपनी महती भूमिका निभाई।

डॉ. सुधा बैसा
प्राचार्य



Dr. Sudhanshu Dhar Dwivedi
Professor Chemistry
Co-ordinator of Internal Quality Assurance Cell
sudhanshu_dhar@yahoo.co.in
9425007434

This is an era of severe climate change and we at crossroads finding balance between the developmental agenda and environmental protection. In the present scenario, we at Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College, Bhopal, feel our responsibility to control carbon footprints through various activities. We have always been frontrunners while talking about Eco restoration steps, which is very evident from the stated vision of the college. The college has always promoted the cause with various on campus and off campus drives like plantation in college and plantation in villages adopted under “**Gram God Yojana**” with participation in awareness campaigns, **Polythene free campus drives** and other **eco-friendly** initiatives of the college.

Internal Quality Assurance Cell has always been clear on its stance of **Green, Energy and Environment Audit** and is a firm believer of its importance as environmental restoration technique. We at college are committed to use this Green, Energy and Environment Audit as a means to improve our performance towards environmental protection.

I as IQAC Coordinator feel proud and happy to dedicate this Green, Energy and Environment Audit report to all stakeholders. I am sure this report will lead us to campaign and serve as a guiding stars its not only to us but to all walks of society.

I also congratulate Dr. R.C. Maheshwari, Dean Academics, IES University, Bhopal and his team for the efforts taken to bring out this Green, Energy and Environment Audit Report 2021-22 of Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College, Bhopal in the present shape and request all the stakeholders of the college to implement all the suggestions and recommendations of the report endeavour to reduce the hazardous elements polluting the environment.

Dr. Sudhanshu Dhar Dwivedi



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(University Established Vide act No. 11 of 2019 (S.No. 36) of M.P. Govt.
and recognised under section 2(f) of UGC Act 1956)

To whom so ever it may concern

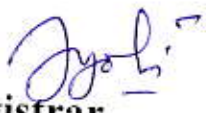
Certificate

Ref.No.: IES/MO/03/11

Date:- 28/06/2022

This is to certify that “Govt. Dr.Shayama Prasad Mukherjee Science & Commerce College, Bhopal” has conducted Green Audit, Environment Audit and Energy Audit in the Academic year 2021-22 to assess the green initiatives, planning efforts, activities, implemented in the college campus like plantation, Waste Management, Water Quality, Soil Quality, Plastic Ban, Conservation of Energy, Energy Management and various Environmental awareness activities. IES University, Bhopal (An ISO 9001-2008 Group of Institutions) has verified campus data of the college.

This Green Audit, Environment Audit and Energy Audit also aimed to assess the impact of green initiatives for maintenance of the eco-friendly campus.


Registrar
IES University
Kalkheda, Ratibad, Bhopal

Regd. Office
IES University
Bhopal (M.P.)



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(Approved by AICTE, PCI, New Delhi & MP Nurses Council)

Acknowledgement

IES University, Bhopal is thankful to Govt. Dr. Shyama Prasad Mukherjee, Science & Commerce, College, Bhopal for their positive support in undertaking this intricate task for the Green Audit, Environment Audit and Energy Audit. The field studies would not have been completed on time without their interaction and timely support. We are grateful for their Co-operation during field studies and provision of data for the study.

The officials of Govt. Dr. Shyama Prasad Mukherjee Science & Commerce, College, Bhopal Co-ordinated and helped to the audit team during the field study and measurement. IES, University, Bhopal expresses special thanks to the following members of the Internal Audit Team:

- | | |
|-------------------------------|-----------------------|
| 1. Dr. Sudhanshu Dhar Dwivedi | – Professor |
| 2. Dr. S. D. Singh | – Professor |
| 3. Dr. Rajesh Shrivastav | – Professor |
| 4. Dr. Ila Jain | – Professor |
| 5. Dr. Asha Wadhvani | – Assistant Professor |
| 6. Dr. S. K. Malhotra | – Associate Professor |

We are thankful to the management for giving us the opportunity to be involved in this very interesting and challenging task. We would be happy to provide any further clarifications, if required to facilitate implementation of the recommendations.


Registrar
IES University
Bhopal (M.P.)

Hariyali Mahotasava Plantation Drive

08.07.22

Government Dr. Shyama Prasad
Mukherjee College Bhopal



GPS

Bhopal, Madhya Pradesh, India

1 Raj Hans Colony, Kolar Rd, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

Lat 23.166907°

Long 77.420249°

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Bhopal, Madhya Pradesh, India

B-181, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

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Bhopal, Madhya Pradesh, India

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Bhopal, Madhya Pradesh, India

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Lat 23.166942°

Long 77.420237°

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Bhopal, Madhya Pradesh, India

B-181, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

Lat 23.166961°

Long 77.420209°

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Bhopal, Madhya Pradesh, India

F-201, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

Lat 23.166996°

Long 77.420241°

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Bhopal, Madhya Pradesh, India

1 Raj Hans Colony, Kolar Rd, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

Lat 23.166907°

Long 77.420249°

08/07/22 02:47 PM



Bhopal, Madhya Pradesh, India

1 Raj Hans Colony, Kolar Rd, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

Lat 23.166916°

Long 77.42024°

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Bhopal, Madhya Pradesh, India

B-181, F-Sector, Rajharsh Colony, Kolar Rd, Bhopal, Madhya Pradesh 462042, India

Lat 23.166865°

Long 77.420214°

08/07/22 02:48 PM

Environment Day – Plantation in College Campus



College Details

No.	Particulars	Details
1	Name of the college	Govt. Dr. Shyama Prasad Mukharjee College, Bhopal
2	Location	Rajharsh Colony, Kolar Road Bhopal (M.P.)
3	Pin Code	462042
4	Name of the Principal	Dr. Sudha Baisa
5	Timings of college	09:30 AM to 5:30 PM
6	Operating System	Government
7	Annual working Days	300
8	Source of Electricity	MPMKVVCL
9	Contact no of college	0755-2551837
10	Email ID	hegbscbho@mp.gov.in
11	Website	http://gscbhopal.in




**ECO CLUB AND BOTANY DEPARTMENT OF
GOVT DR SHYAMA PRASAD MUKHERJEE SCIENCE & COMMERCE ,
COLLEGE, KOLAR ROAD ,BHOPAL MP**

Organizes a Lecture on

**“ SIGNIFICANCE OF
NATIONAL POLLUTION PREVENTION DAY ”
(2ND DECEMBER)**


DATE : 2ND DECEMBER 2021
TIME : 1.00 PM

PATRON




Dr. Sanjay Telang
PRINCIPAL

RESOURCE PERSON



Dr. Nandkumar Zambare
Asstt. Professor
St. Gonsalo Garcia College ,Vasai Mumbai

CONVENER



Dr. Kirti Jain
PROFESSOR, HOD, BOTANY

Google Meet Link Will be Send at 12.45 pm (2nd DECEMBER 2021) on Whatsapp



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1- Introduction

Located in the city of lakes, Government Dr. Shyama Prasad Mukherjee Science and Commerce College, Bhopal has ever since its inception in 1982 shown a strong commitment to excellence in teaching as well as in imparting moral and social values to its students. The calm, natural and aesthetic ambience of the college provides an enabling ethos to the students and kindles in them a desire for intellectual progress. It is a Co-educational institution where students are continuously motivated to strive towards excellence. Government Dr. Shyama Prasad Mukherjee Science and Commerce College, Bhopal holds its special place in the state. It facilitates and promotes studies in emerging areas in the discipline of Arts, Commerce, Science and Home Science.

The college has a team of well-qualified faculty members headed by the full-fledged Principal and an equally efficient supporting staff.

The National Assessment and Accreditation Council (NAAC) placed the college at B grade in the year 2006 and at B++ with 2.79 marks in the year 2016. At present it is striving for A grade. With the invaluable contribution of RUSA, World Bank and Janbhagidari Samiti, the college is trying to expand its resources to the maximum for the benefit of students.

The following are some of the highlights of our college :-

- Implementation of NEP-2020
- Modern equipments / well-equipped labs
- Teaching vocational courses
- Career guidance & Placements Cell
- Tutor-guardian Scheme
- Virtual Classroom
- Smart Classes
- CCTV surveillance
- Physical Education
- NCC Unit/NSS Unit

All these achievements have increased our responsibility to maintain the high standard of education at our level. Our holistic approach and philosophy is to establish the students as a strong unit in the society. We seek the support and suggestions of the students, parents and academic world with this hope and belief for the holistic development of our stakeholders. The Green Audit,

Environment and Energy Audit conducted in Govt. Dr. Shyama Prasad Mukherjee College, Bhopal is an external audit that aims to create environmental consciousness.

- Water testing has been conducted through Quality Control (Water) Laboratory, Nagar Nigam, Arera Hills, Bhopal (M.P.) as per BIS-10500-2012 drinking water norms.
- Soil Testing has been conducted through soil testing laboratory Bhopal a body of the Department of Agriculture and Farmers welfare M.P. and Department of Agriculture and Cooperative Govt. of India.
- Waste Disposal Audit has been conducted through S.H.O, Nagar Nigam, Bhopal M.P.

All the above tests have been conducted under the aegis of IES University Bhopal, Which is an ISO 9001-2008 Certified Institution.

AUDIT TEAM

Project Title– Green, Environment & Energy Audit

Organization – IES Pvt. University, Bhopal

Client - Govt. Dr.Shyama Prasad Mukherjee Science & Commerce College,
Bhopal

Conducted By:-

- | | |
|-------------------------|-----------------------|
| 1. Dr.Rashmi Shrivastav | – Associate Professor |
| 2. Dr.Vandana Sharma | – Assistant Professor |
| 3. Dr.PriyaDubey | – Associate Professor |
| 4. Dr.D.K. Gupta | – Professor |
| 5. Dr.Jitendra Malviya | – Professor |

Internal Audit Team:-

- | | |
|------------------------------|-----------------------|
| 1. Dr.Sudhanshu Dhar Dwivedi | – Professor |
| 2. Dr.S.D.Singh | – Professor |
| 3. Dr. Rajesh Shrivastav | – Professor |
| 4. Dr.Ila Jain | – Professor |
| 5. Dr.Asha Wachwani | – Assistant Professor |
| 6. Dr.S.K. Malhotra | – Associate Professor |

IES

(Seal & Sign)



Registrar
IES University
Bhopal (M.P.)

Name

Dr Jyotram / Sawale

Address

IES University Campus, Kalkheda, Rahisad, Main Road,
Bhopal.

Registration No-

3- Mission& Vision

Mission

- Government College provides students with exceptional quality educational experiences and augment services that lead to the successful completion of degrees, transfer, certificates, career/technical education and exemplary basic skills proficiency.
- The college fosters academic and career success through holistic development of critical thinking, effective communication skills, creativity and innovation, cultural awareness in a safe, accessible, conducive and affordable learning environment.
- To cater for the needs of our demographically diverse student population, we embrace equity and accountability through measurable learning imbibed outcomes, ethical data-driven decisions and student achievement processes.

Vision

The institution is committed to provide sublime educational opportunities that are perceptibly amenable to the needs of our students, and empowers them to meet and surpass challenges by being an active ingredient in sculpturing the future of our world in general and own society in particular. The green Audit mints to analyse environmental practices within and outside the college campus which will have an impact on the eco-friendly environment.

4- Objectives & Duration of Green Audit

Objective of the Green Audit

The IQAC of the college has setup Green and Energy Audit Team in order to carry out the aforesaid Audit. The main objectives of the audit are-

- To create a green Campus.
- To identify the flora of the college and documentation of the identified plant species in the area / campus.
- To create environmental consciousness and sense of responsibility among students and the faculty.
- To implement green practices consistently and effectively towards creating a sustainable campus.
- To identify strengths and weaknesses of green practices.
- To empower the college to frame a better environmental performance.
- To identify and assess threats to the Environment.
- To develop awareness towards environmental ethics among the staff and students.
- The long term objective of the green audit is to collect baseline data of environmental parameters and resolve the environmental issues before they become a problem.
- To create awareness among the students for different types of waste management.
- To generate basic data for further reference.

Duration of the Green Audit

The Green Audit field observation and data collection was carried out during the session 2021-22.

5- Green Audit

The Study of the Flora of the College Campus

The study of the different plants/vegetation present in the college campus was done under Green Audit. Different species of plants were identified after their study on the basis of their taxonomic features. Around 54 to 55 different species of plants were reported to be found in the campus in relation to this study.

Phytochemistry of the campus was studied by the following students of M.Sc IIIrd sem Botany under the guidance of Dr. S.D.Singh, Prof. Department of Botany.

1. Mr. Tahir khan
2. Ms. Mehak Dangi
3. Mr. Deena Nath
4. Ms. Sapna
5. Ms. Kavyanjali
6. Ms. Kavita Sahu
7. Mr. Dharmendra Verma
8. Ms. Akanksha

The college campus is spread over an area of 1.19 acres. The college campus has, rich diversity of plants and hence some members of natural vegetation are still present here. The list of the Botanical names, common names, and the family of the botanical plants is as follows -

S.N	Botanical Name	Common Name	Family
1	<i>Annona squamosa</i>	Sareefa , Sugar, Apple	Annonaceae
2	<i>Datura cordifolia</i>	Dhatura	Solanaceae
3	<i>Tinospora cordifolia</i>	Giloe	Menispermaceae
4	<i>Acacia arabica</i>	Babool	Fabaceae
5	<i>Lantana camara</i>	Lantana	Verbenaceae
6	<i>Parthenium hysteroph</i>	GajarGhas	Asteraceae
7	<i>Alstonia scholaris</i>	White Cheese Wood	Apocynaceae
8	<i>Leucaena leucocephala</i>	Jumbag, River, Tamarind	Fabaceae
9	<i>ZiZipus jujuba</i>	Ber	Rhamnaceae
10	<i>Pongamia pinnata</i>	Indian Beech	Fabaceae
11	<i>Moringa oleifera</i>	Munga	Moringaceae
12	<i>Ficus glomerata</i>	Bargad	Moraceae
13	<i>Ficus religiosa</i>	Peepal	Moraceae

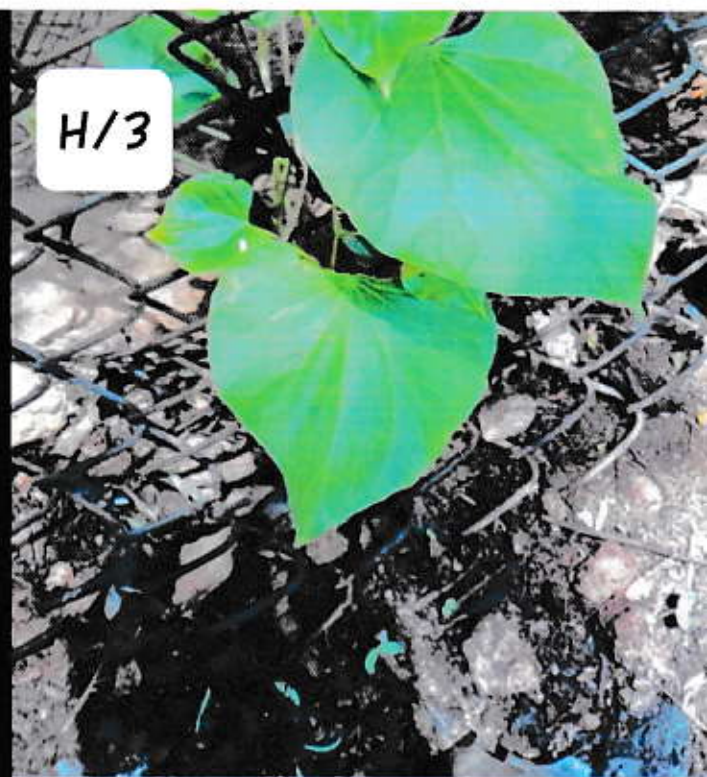
14	<i>Seena hebecarpa</i>	American Senna	Leguminosae
15	<i>Vitex negundo</i>	Chinese Chaste	Lamiaceae
16	<i>Colutea arborescens</i>	Bladder Senna	Fabaceae
17	<i>Mesua ferrea</i>	Nagkesar, Kobra Saffron	Calophyllaceae
18	<i>Dalbergia sissoo</i>	Seesam	Fabaceae
19	<i>River tamarind</i>	Jumbay	Fabaceae
20	<i>Asparagus recemosus</i>	Satavar	Aspragceae
21	<i>Borassus b. flabllifer</i>	Palm Tree Panei	Arecaceae
22	<i>Gliridia sepium</i>	Quick Stick	Fabaceae
23	<i>Syzygium cumini</i>	Jamun	Myrtaceae
24	<i>Butea monosperme</i>	Palash	Fabaceae
25	<i>Calotropis procera</i>	Madar, Milkweeds	Apocynaceae
26	<i>Azadirachta indica</i>	Neem	Meliaceae
27	<i>Cayratia trifoliata</i>	Ramchana, Amlabel	Vitaceae
28	<i>Zephyranthes citrina</i>	Yellow Rain Lily	Amaryllidaceae
29	<i>Psidium guava</i>	Guava, Amrood	Myrtaceae
30	<i>Putranjiva roxburghii</i>	Kuduriu, Putijia	Putranjivaceae
31	<i>Catharanthus roseus</i>	SadaSuhagan	Apocynaceae
32	<i>Mangifera indica</i>	AAM, Mango	Anacardiaceae
33	<i>Capsicum annum</i>	Mirchi	Solanaceae
34	<i>Rosa india</i>	Gulab	Rosaceae
35	<i>Sterculia species</i>	Java-olive Hazel	Malvaceae
36	<i>Ocimum species</i>	Tulsi	Lamiaceae
37	<i>Euphorbia hirta</i>	Doodhilata	Euphorbiaceae
38	<i>Elevsine indica</i>	Indian Goosegrass	Poaceae
39	<i>Themda species</i>	Nut Grass	Poaceae
40	<i>Cyperus rotundus</i>	Coco-grass, Juva	Cyperaceae
41	<i>Oplismenus burmannii</i>	Burmam'sBasketgrass	Poaceae
42	<i>Serraca asoca</i>	Ashok	Fabaceae
43	<i>Phoenix sylvestris</i>	Date Palm	Arecaceae
44	<i>Alternanthera ficoidea</i>	Snowflower	Amaranthaceae
45	<i>Hibiscus rosa sinensis</i>	Gudhal	Malvaceae
46	<i>Ocimum basilicum</i>	Sweet Basil	Lamiaceae
47	<i>Coccinia grandis</i>	IVY Gourd	Cucurbitaceae
48	<i>Azima tetracantha</i>	Bee Sting Bush	Salvadoraceae
49	<i>Millettia pinnata</i>	PongameOiltree	Fabaceae
50	<i>Abutilon indicum</i>	Monkey Bush	Malvaceae
51	<i>Sesbania grandiflora</i>	Kuturai, Agati	Fabaceae
52	<i>Solanum xanthocarpum</i>	Bhatkataiya	Solanaceae
53	<i>Senna s. alata</i>	Candle Bush	Fabaceae
54	<i>Bombax ceiba</i>	Cotton Tree, Silk Tree	Malvaceae
55	<i>Chrozophora tinctoria</i>	Suryavarti	Euphorbiaceae

References:-

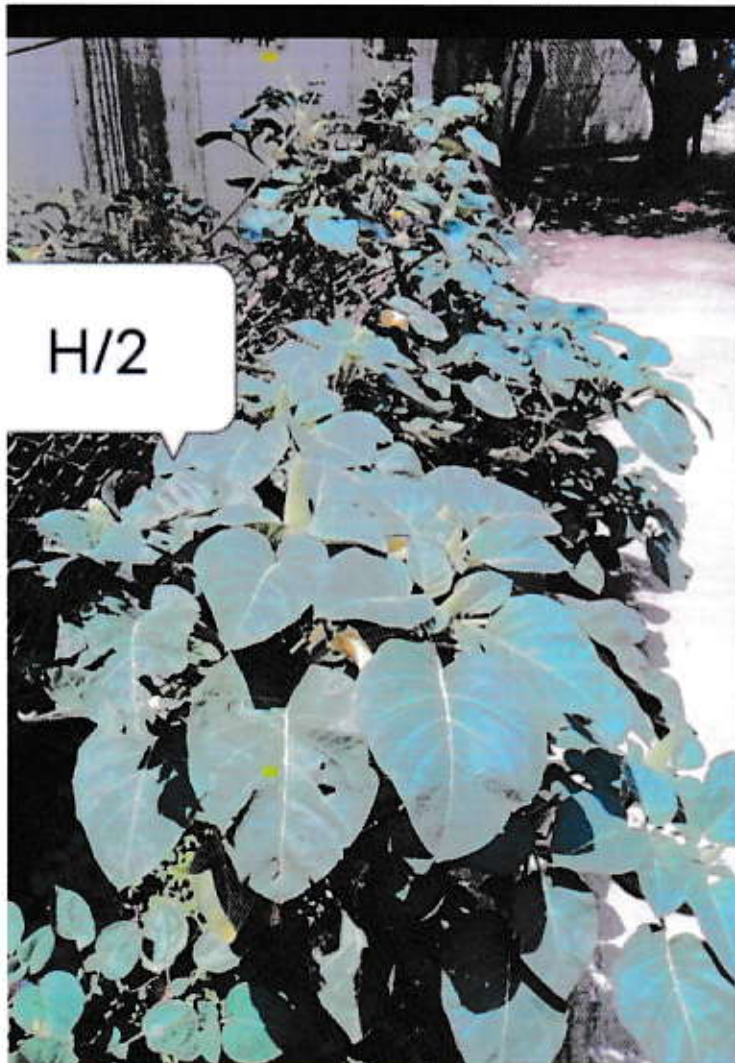
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Botanical name - *Annona squamosa*
Common name - sareefa, sugar apple
Family - Annonaceae



Botanical name - *Tinospora cordifolia*
Common name - Giloe
Family - Menispermaceae



Botanical name - *Datura cordifolia*
Common name - Dhatura
Family - Solanaceae



Botanical name - *Acacia arabica*
Common name - Babool
Family - Fabaceae

H/5



Botanical name - *Lantana camara*
Common name - Lantana
Family - Verbenaceae

H/7



Botanical name - *Alstonia scholaris*
Common name - white cheese wood
Family - Apocynaceae

H/6



Botanical name - *Parthenium hysterophorus*
Common name - gajar ghansh
Family - Asteraceae

H/8



Botanical name - *Leucaena leucocephala*
Common name - jumbay, river tamarind
Family - Fabaceae



H/9

Botanical name- *Zizipus jujuba*
Common name - baer
Family - Rhamnaceae



H/11

Botanical name- *Moringa oleifera*
Common name - munga
Family - Moringaceae



H/10

Botanical name- *Pongamia pinnata*
Common name - Indian beech
Family - Fabaceae



H/12

Botanical name- *Ficus glomerata*
Common name - bargad
Family - Moraceae

H/13



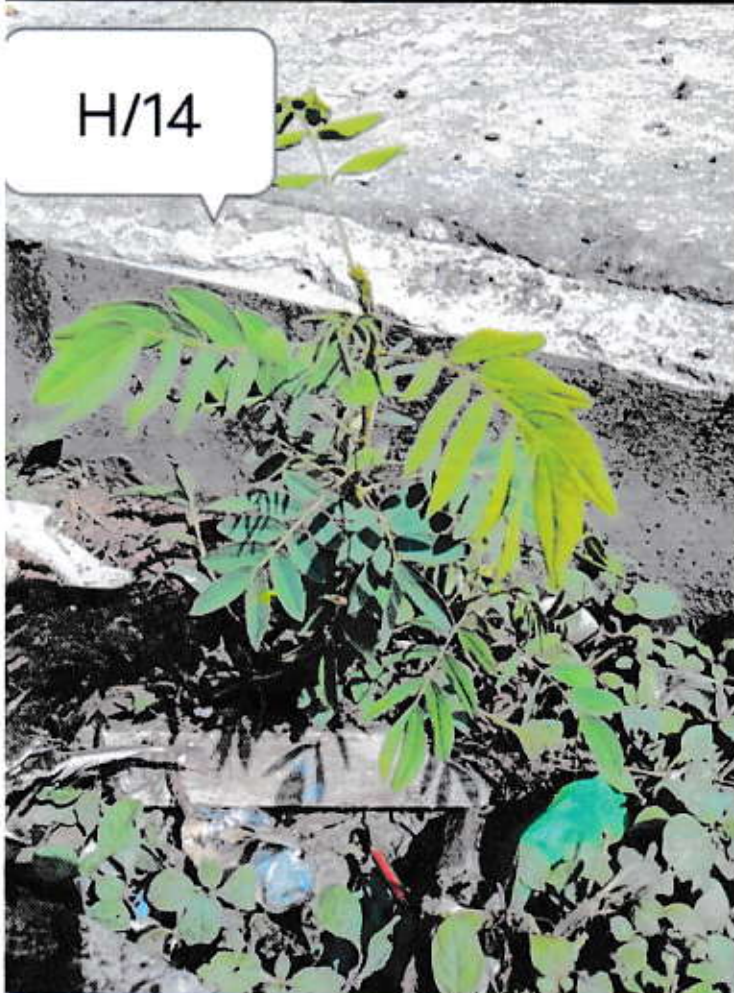
Botanical name - *Ficus religiosa*
Common name - peepal
Family - Moraceae

H/15



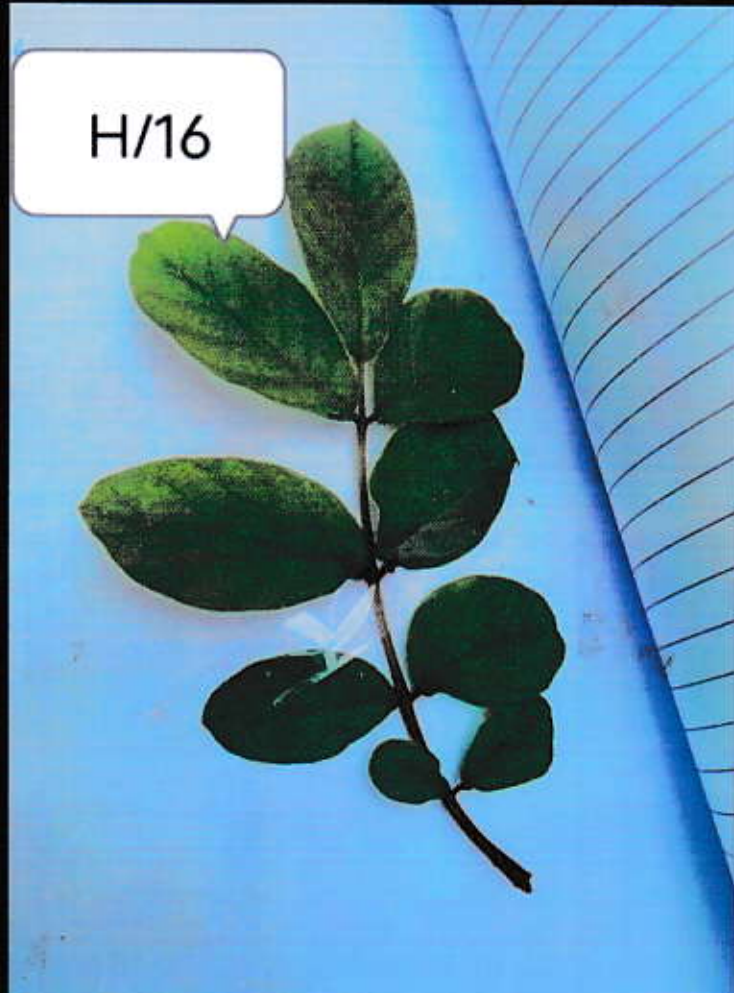
Botanical name - *Vitex negundo*
Common name - Chinese chaste
Family - Lamiaceae

H/14



Botanical name - *Senna hebecarpa*
Common name - American senna
Family - Leguminosae

H/16



Botanical name - *Colutea arborescens*
Common name - bladder senna
Family - Fabaceae



Botanical name - *Mesua ferrea*
Common name - nagkesar, kobra, saffron
Family - Calophyllaceae



Botanical name - *River tamarind*
Common name - jumbay
Family - Fabaceae



Botanical name - *Dalbergia sissoo*
Common name - seesam
Family - Fabaceae



Botanical name - *Asperagus racemosus*
Common name - satavar
Family - Asperagaceae

H/21



Botanical name- *Borassus B. flabillifer*
Common name - palm tree, panei
Family - Arecaceae

H/23



Botanical name- *Syzygium cumini*
Common name - jamun
Family - Myrtaceae

H/22



Botanical name- *Gliricidia sepium*
Common name - quickstick
Family - Fabaceae

H/24



Botanical name- *Butea monosperma*
Common name - Palash
Family - Leguminosae, Fabaceae



H/25

Botanical name - *Calotropus procera*
Common name - madar, milkweeds
Family - Apocynaceae



H/27

Botanical name - *Cayratia trifoliata*
Common name - ramchana, amlabel
Family - Vitaceae



H/26

Botanical name - *Azadirachta indica*
Common name - neem
Family - meliaceae



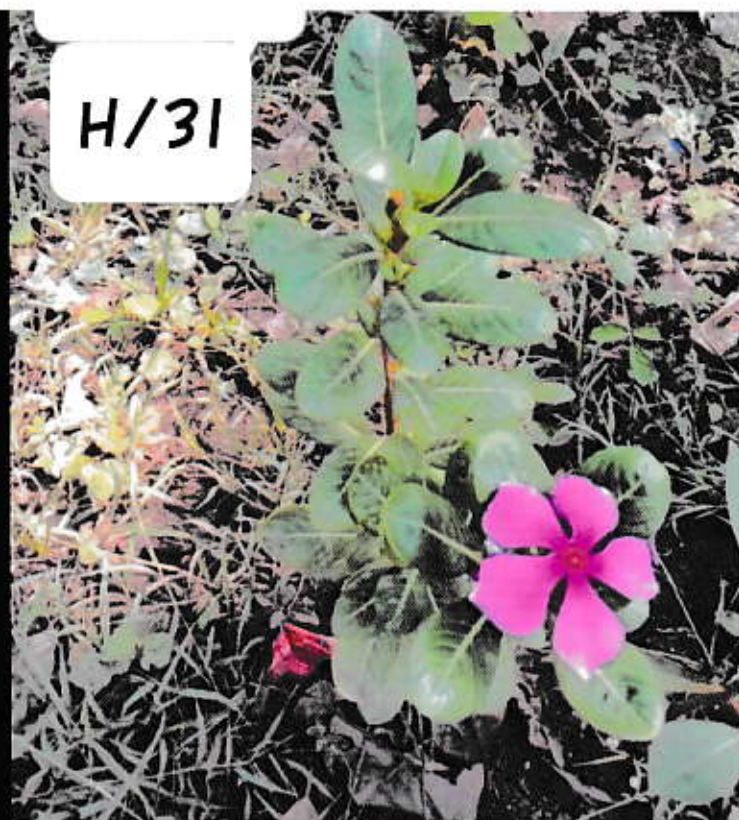
H/28

Botanical name - *Zephyranthes citrina*
Common name - yellow rain lily
Family - Amaryllidaceae



H/29

Botanical name- *Psidium guajava*
Common name - guava, amrood, abas
Family - Myrtaceae



H/31

Botanical name- *Catharanthus roseus*
Common name - sada suhagan
Family - Apocynaceae



H/30

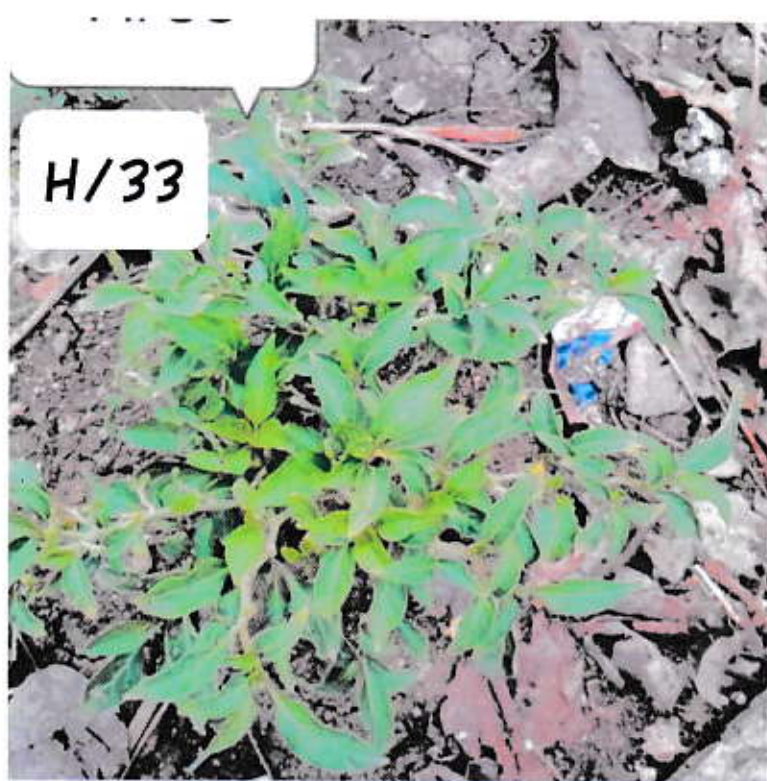
Botanical name- *Putranjiva roxburghii*
Common name - kuduri, putijia
Family - putranjivaceae



H/32

Botanical name- *Mangifera indica*
Common name - gam, mango
Family - Anacardiaceae

H/33



Botanical name - *Capsicum annuum*
Common name - mirchi
Family - solanaceae

H/35



Botanical name - *Sterculia sp*
Common name - Java olive, hazel
Family - Malvaceae

H/34



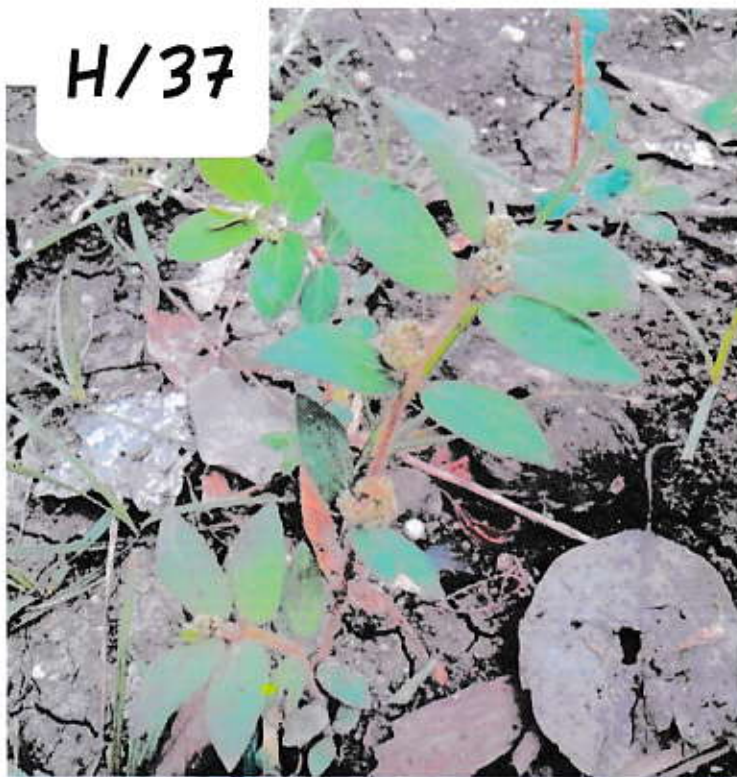
Botanical name - *Rosa indica*
Common name - gulab
Family - Rosaceae

H/36



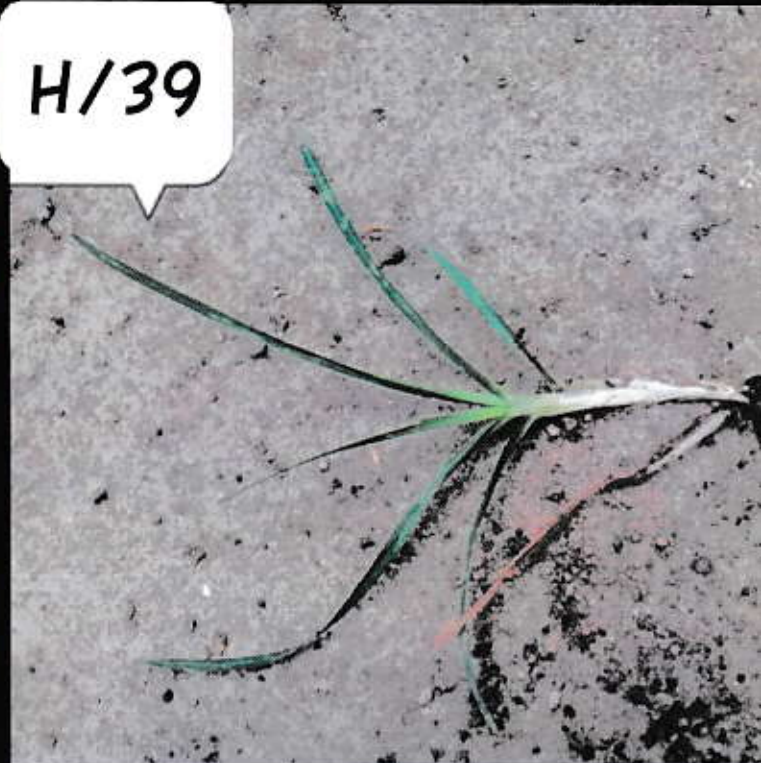
Botanical name - *Ocimum sp*
Common name - tulsi
Family - Lamiaceae

H/37



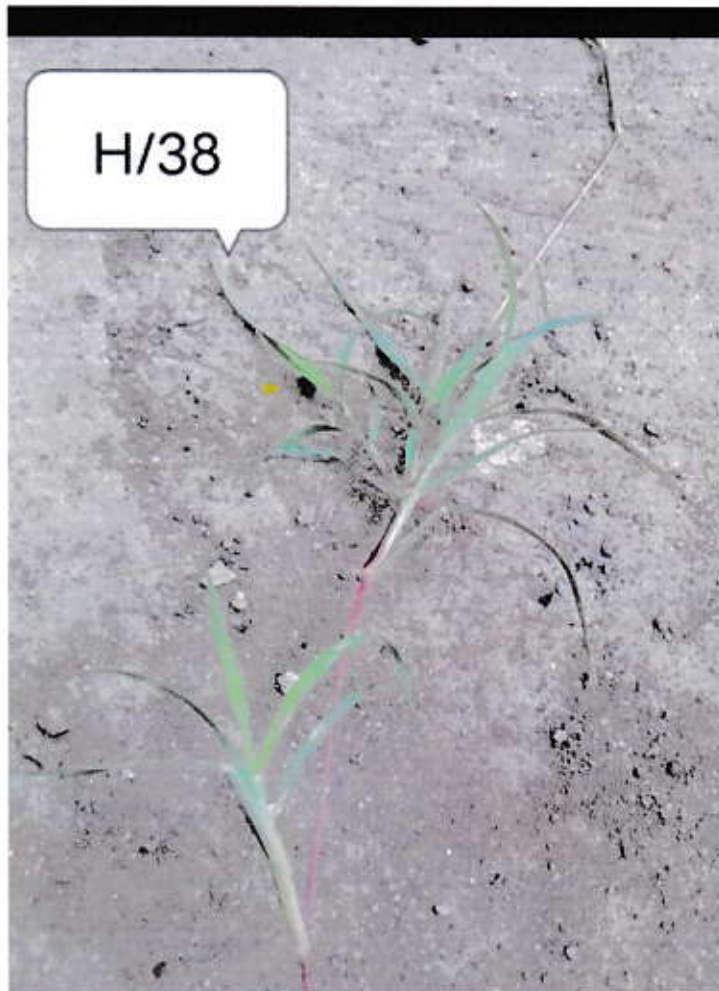
Botanical name - *Euphorbia hirta*
Common name - doodhlata
Family - Euphorbeaceae

H/39



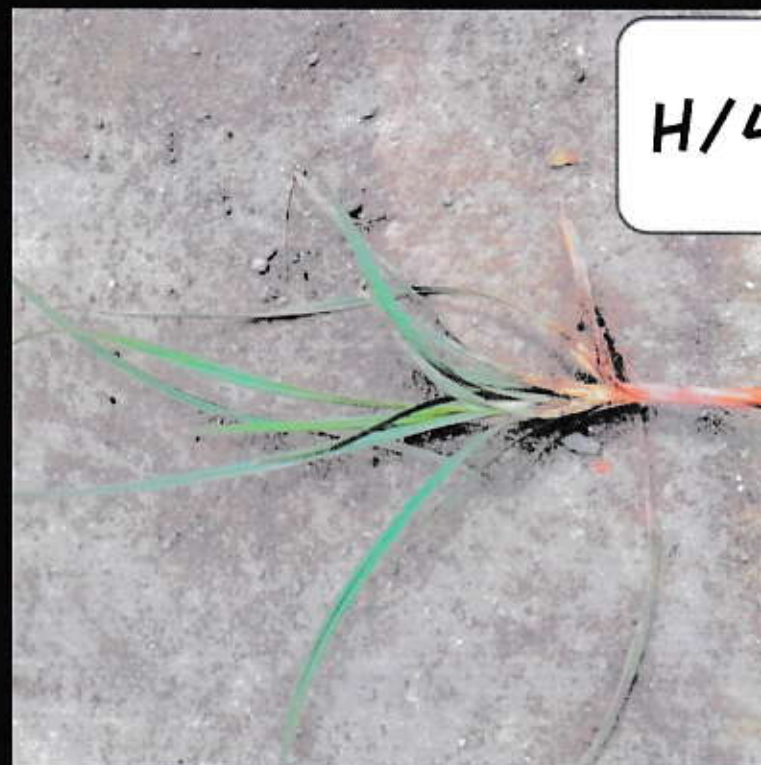
Botanical name - *Themeda* sp
Common name - nut grass
Family - poaceae

H/38



Botanical name - *Eleusine indica*
Common name - indian goosegrass
Family - poaceae

H/4



Botanical name - *Cyperus rotundus*
Common name - coco-grass, juva
Family - cyperaceae

H/41



Botanical name - *Oplismenus burmannii*
Common name - burmann's basketgrass
Family - poaceae

H/43



Botanical name - *Phoenix Sylvestris*
Common name - date palm
Family - arecaceae

H/42



Botanical name - *Sesbania sesban*
Common name - ashok
Family - Fabaceae

H/44



Botanical name - *Alternanthera ficoidea*
Common name - snowflower
Family - Amaranthaceae



Botanical name- *Hibiscus rosa-sinensis*
Common name - gudhal
Family - Malvaceae



Botanical name- *Coccinia grandis*
Common name - ivy gourd
Family - Cucurbitaceae



Botanical name- *Ocimum basilicum*
Common name - sweet basil
Family - Lamiaceae



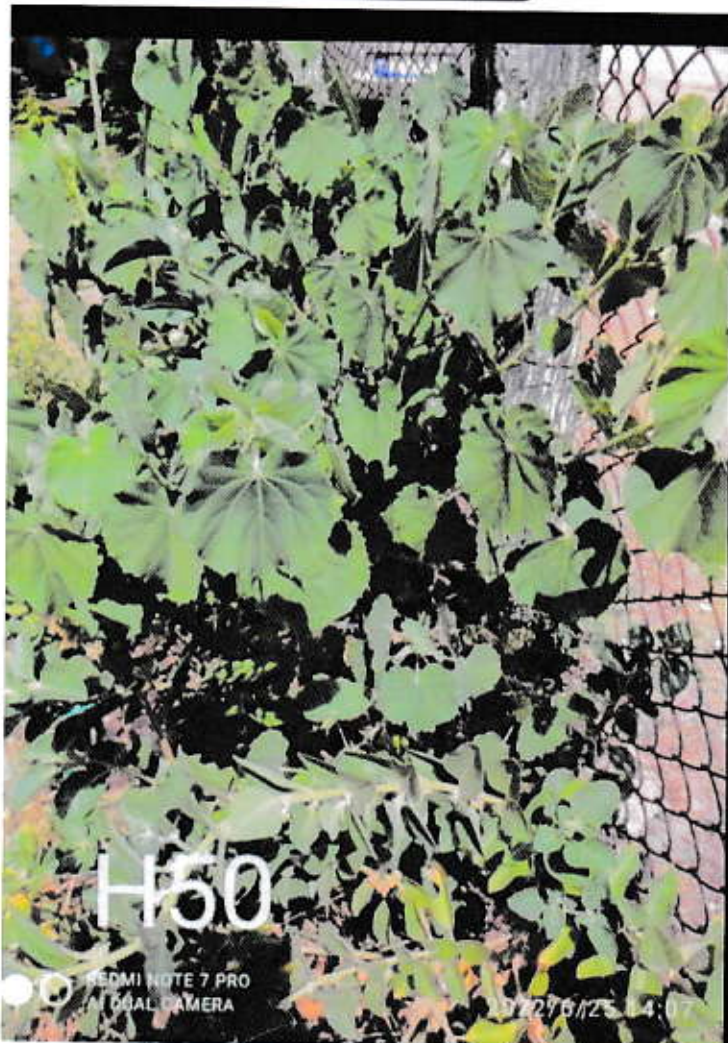
Botanical name- *Azima tetracantha*
Common name - bee sting bush
Family - salvadoraceae



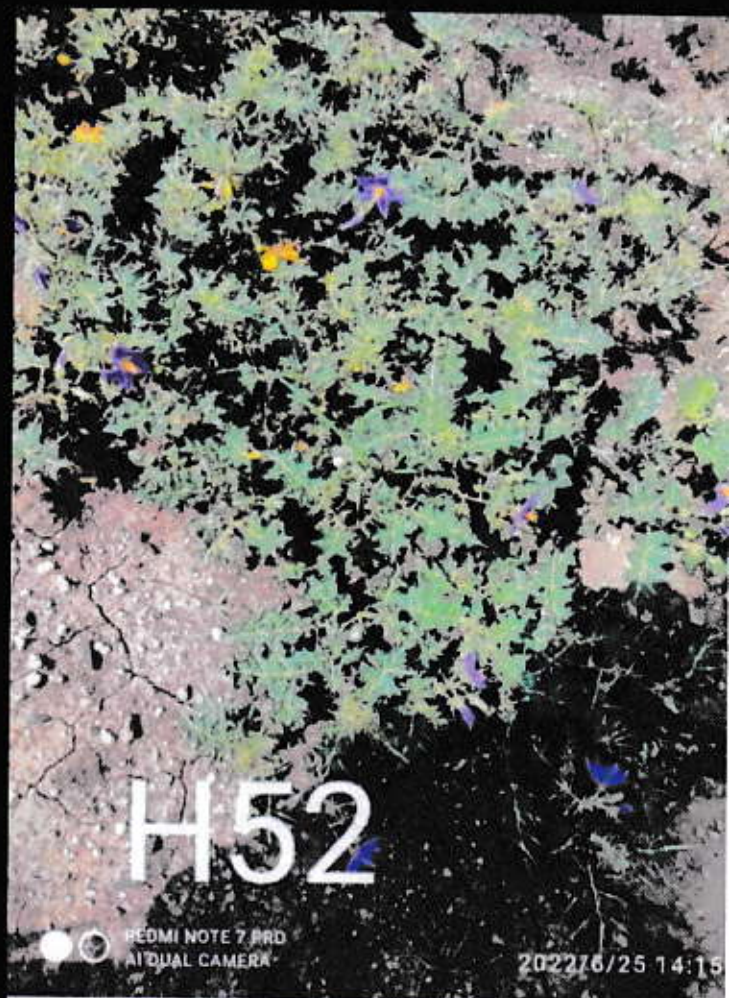
Botanical name - *Millettia pinnata*
Common name - pongame oil tree
Family - Fabaceae



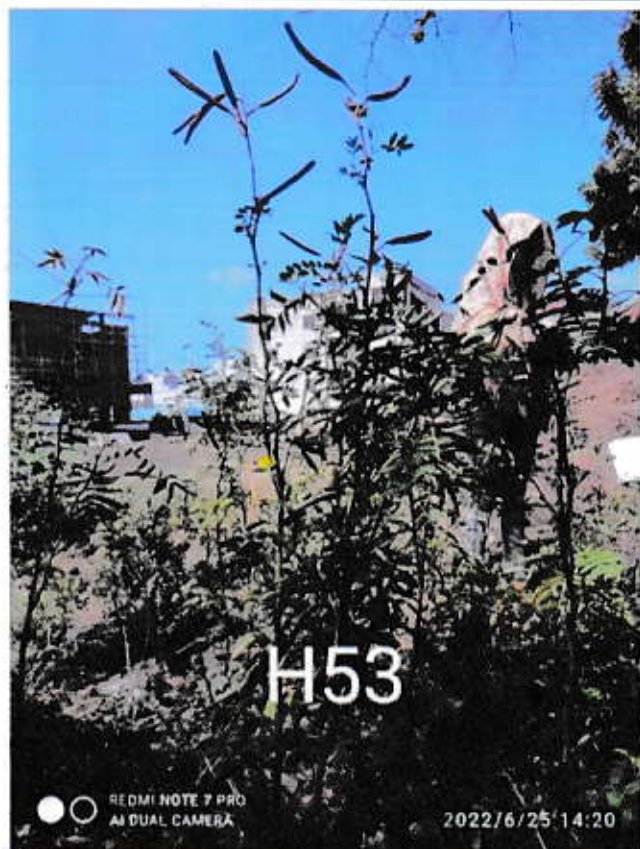
Botanical name - *Sesbania grandiflora*
Common name - kuturai, Agati
Family - Fabaceae



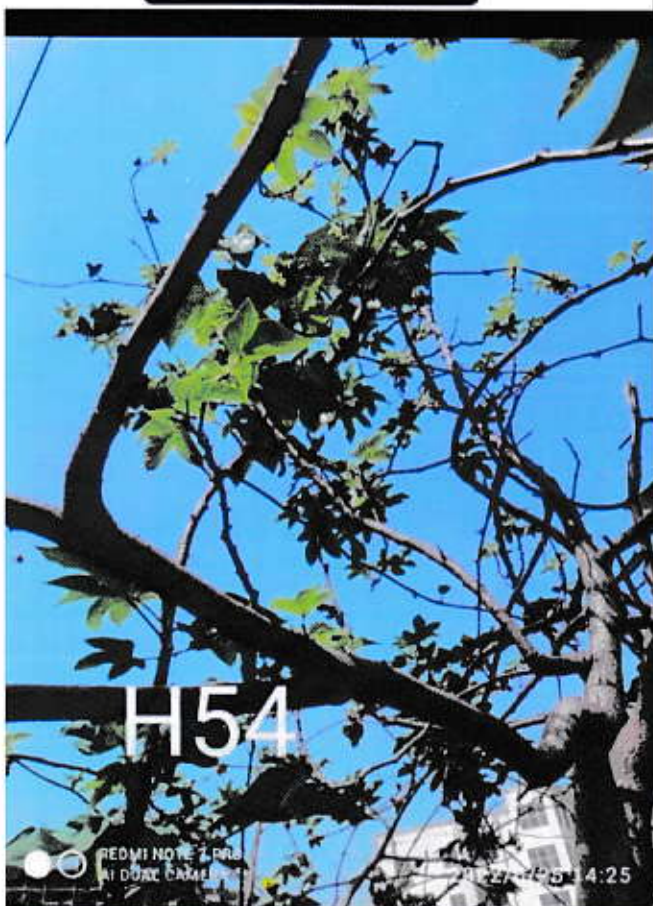
Botanical name - *Abutilon indicum*
Common name - monkey bush, india abutilon
Family - malvaceae



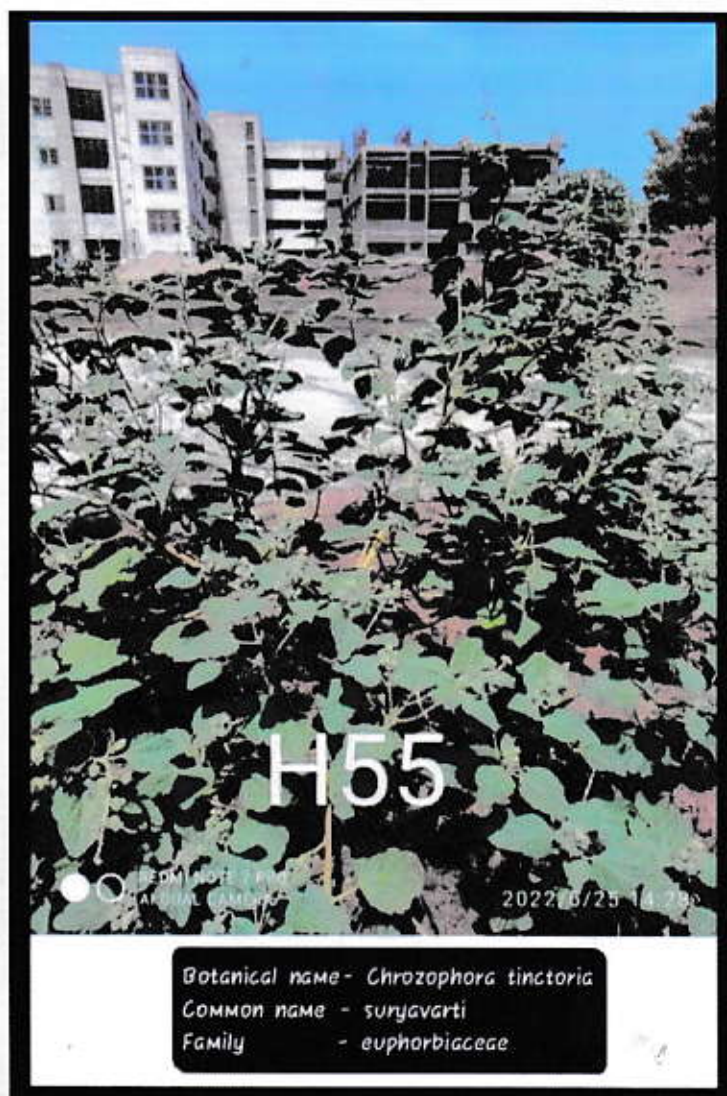
Botanical name - *Solanum xanthocarpum*
Common name - bhatkata
Family - solanaceae



Botanical name - *Senna s. alata*
Common name - candle bush
Family - fabaceae



Botanical name - *Bombax ceiba*
Common name - Cotton tree, silk tree
Family - Malvaceae



Botanical name - *Chrozophora tinctoria*
Common name - suryavarti
Family - euphorbiaceae

a) Goals of Green Audit

- To develop an ideal green sustainable campus.
- To identify those best green practices, which could be easily applicable in the campus such as :
 - To identify and manage the existing resources of college at highest level.
 - To diagnose the weaknesses of college in terms of available resources and to help find the ways to transform those weaknesses into strength.
 - To identify the future possible complication in the management and further development of resources, and prepare an efficient strategy beforehand to rectify the complications
- To develop a master plan for the systematic management of waste products at following 3-levels :-
 - a- To help reduce the generation of waste at the source itself.
 - b- To promote the modes and techniques, which could work on “**Best out of waste**” techniques.
 - c- To recycle the solid and water-waste for their reuse in other areas
- To inculcate environmental ethics and values among students as well as staff, keeping the core idea of “ **Think globally and act locally**” .
- To motivate every single person associated with college or visit the campus for sustainable use of available resources.

b) Concept of Land Use

Land use refers to man's activities and the various uses which are carried on and derived from land. Viewing the earth from space, it is now very crucial in man's activities on natural resource. In situations of rapid changes in land use, observations of the Earth from space give the information of human activities and utilization of the landscape.

Remote sensing and GIS techniques are now providing new tools for advanced land use mapping and planning. The collection of remotely sensed data facilitates the synoptic analyses of earth system, function, patterning and change in the local, regional as well as at global scales over time. Satellite imagery particularly is a valuable tool for generating land use map.

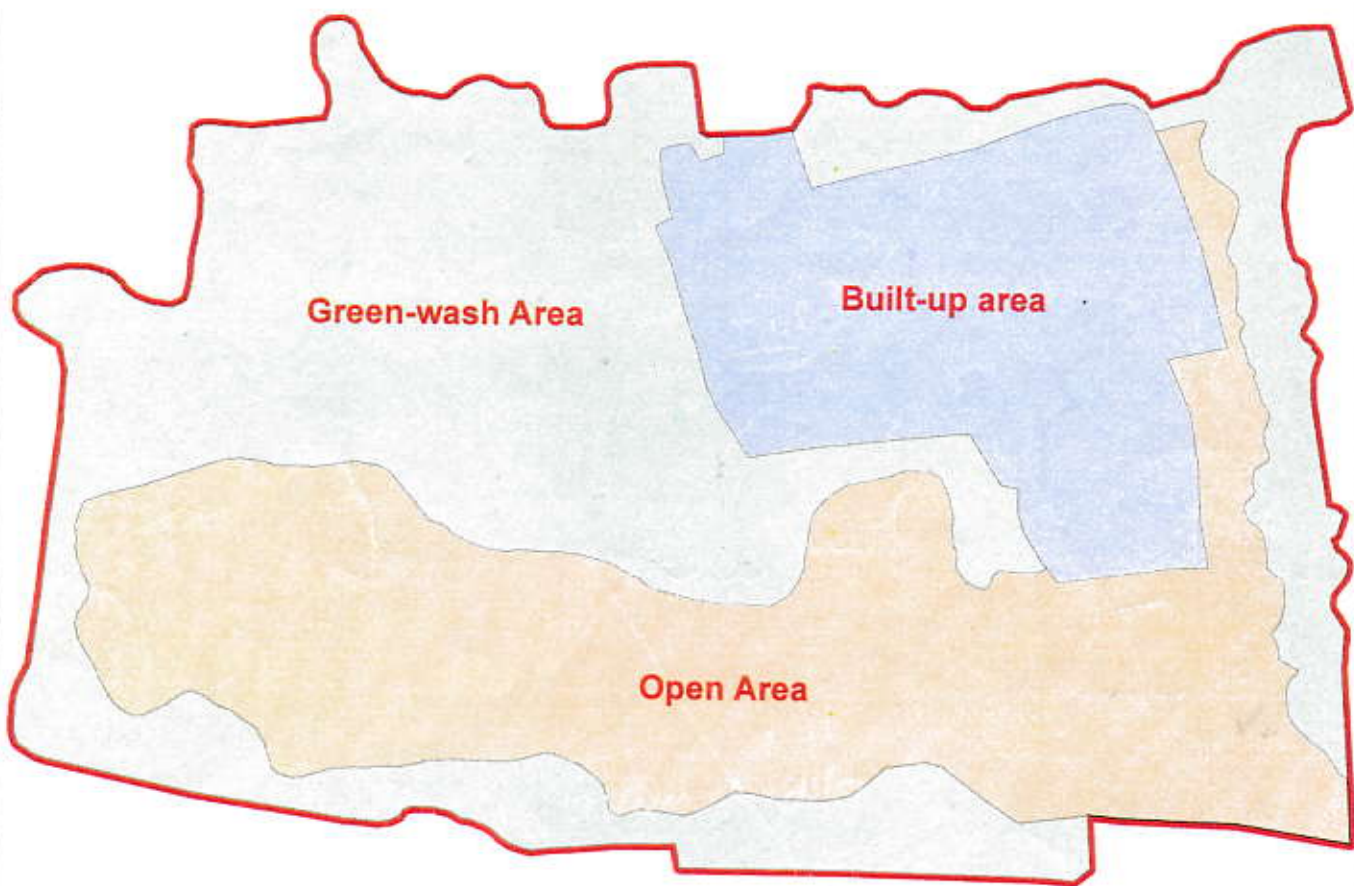
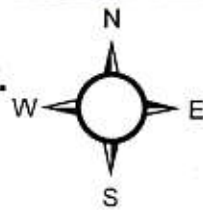
(i) Methodology Adopted for Mapping

Three types of data that is GPS point, field survey data and Google earth data for Geo referencing have been used in this study. Land use map of the study area has been prepared using the above three types of data with the help of Arc GIS pro software. Scanning and digitization of maps and editing of all geo referenced maps have been done using GIS.

(ii) Geographical Location, Greenery Status and Land Use

The college has a pollution free campus spread over 1.20 area of land in the centre of Kolar Area. The college is located at 13.9 kms from the main Railway Station, and 22.7 kms from Bhopal Airport. Scaled image of the college showing Green colour in map is representing green wash area, yellow colour is representing open area, while the blue colour is representing Built-up area and the red colour represents, the total area. Geographical location of the college is 23.167415° N (Latitude) and 77.419148° E (Longitude). Land use drawing of the campus is attached herewith:

**Landuse Map of Dr. Shyama Prasad Mukherjee
Government Science & Commerce College, Bhopal M.P.**



Legend



Built-up area (2062 Sq.meter)



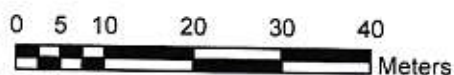
Green-wash Area(4888 Sq.meter)



Open Area(3759 Sq.meter)



Total Area (10709 Sq.meter)



c) Infrastructure of the College

Previously the college was situated at Jahangirabad Bhopal and was spread in about 100x100 square meter area in a double storeyed building. The college had 12 laboratories for UG and PG courses in the Old premises. The college has been shifted at Rajharsh Colony in the year 2020 in a newly constructed three storeyed building. There are 15 classrooms, one virtual classroom, 07 smart classes and 14 laboratories in the new building of the college. The college has a conference hall for academic discussions and meeting. Laboratories are all well-equipped. The maintenance of the building, furniture and equipment is done by the grant provided by the department of higher education, M.P. and by the Janbhagidari Samiti of the institution. UGC also provides grants for the maintenance of infrastructure.

There is a well-equipped Library in the college. There are 20 thousand books available in the Library at present. It includes the books purchased under book bank scheme, UGC, Government and Janbhagidari. The Library is going to subscribe for 15 journals, 8 Daily newspapers and 10 Magazines very soon. The Automation of the library is about to be completed. The membership for DELNET/FLIBNET /Shodh Ganga is under process. Every year the books of Rs 1500/- & stationary of Rs 500/- are distributed to each student belonging to SC/ST category. The following facilities are available in the library -

- Playground for Kabaddi
- Kho-Kho ground
- Volley Ball ground
- Table Tennis
- Special Mattress for Judo, wrestling and yoga
- Multigym and weight training equipments

Ground Floor

- 1- Chemistry Department
- 2- Chemistry Lab PG
- 3- Chemistry Lab UG
- 4- Central Instrumental Laboratory
- 5- Smart Class
- 6- IQAC Room
- 7- Conference Hall
- 8- Principal Chamber
- 9- Account Section
- 10- Office
- 11- Store Room
- 12- Girls Common Room

First Floor

- 1- Maths Department
- 2- F2 (Smart Class Room) Mathematics
- 3- Geography Lab and Department
- 4- Physics Department
- 5- Physics Lab
- 6- Optics Physics Lab
- 7- Computer Lab
- 8- FF1 class room
- 9- FF2 class room
- 10- FF3 class room
- 11- Arts Department
- 12- Commerce Department

Second Floor

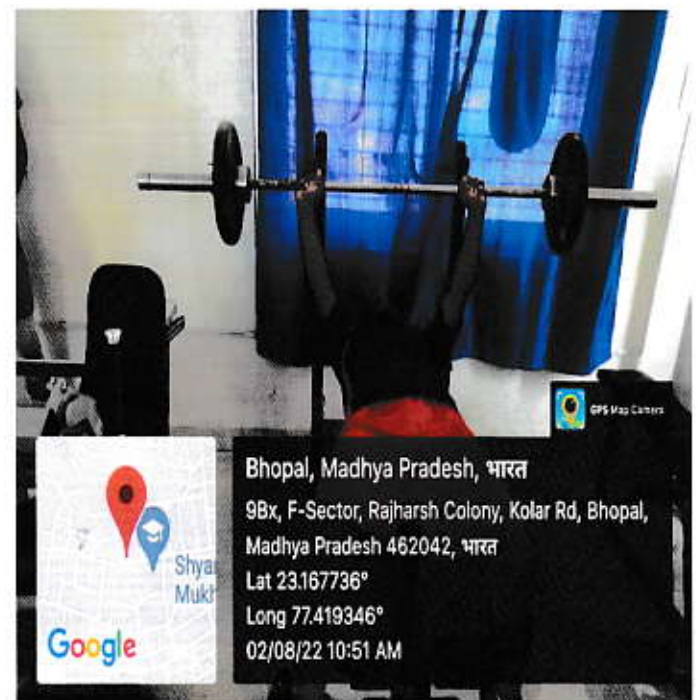
- 1- Home Science Department
- 2- Home Science Lab
- 3- Zoology Department Lab
- 4- Botany Department
- 5- Zoology Department
- 6- Biotechnology Lab UG
- 7- Zoology Lab UG
- 8- Botany Lab UG
- 9- Botany Lab PG
- 10- Smart Class
- 11- Semester Cell
- 12- SSGY (स्वामी विवेकानंद कैरियर मार्गदर्शन प्रकोष्ठ)

Third Floor

- 1- NSS Room
- 2- Sports Department
- 3- NCC Room
- 4- Library
- 5- TF4 Class Room
- 6- TF3 Class Room
- 7- TF2 Class Room
- 8- TF1 Class Room
- 9- TF5 Class Room
- 10- Virtual Class Room

Fourth Floor

1- Gym



d) Waste Audit

(i) Bio Degradable Solid Waste Disposal / Treatment

- 1- Throwing the waste anywhere is strictly prohibited, Usage of plastic bags is discouraged with in the college premises. Dustbins are provided throughout the campus.
- 2- The floor dustbins are covered and easily portable.
- 3- Dry garbage from college campus collected by Housekeeping staff from different collection points. Bhopal Municipal Corporation has a system to collect the garbage including solid waste daily from the college campus.
- 4- The entire campus is daily cleaned regularly by sweepers.

(ii) Recommendations

- 1- Remove old taps, so wastage of water should be stopped.
- 2- Establish rain water harvesting system for each building.
- 3- Awareness program on water conservation to be conducted.
- 4- Control over exploitation of water.

प्रति,

प्राचार्य

शासकीय डॉ. श्यामा प्रसाद मुखर्जी विज्ञान एवं वाणिज्य
वाणिज्य महाविद्यालय कोलार रोड भोपाल (म.प्र.)


विषय:- आपके महाविद्यालय का वेस्ट डिस्पोजल आडिट।

संदर्भ:- इस हेतु महाविद्यालय का पत्र क्रमांक 869 दिनांक 21.05.2022.

संदर्भित पत्र के अनुसार महाविद्यालय परिसर का वांछित वेस्ट डिस्पोजल ऑडिट किया गया तथा विवरण निम्नानुसार पाया गया।

1. महाविद्यालय में कुल सफाई कर्मचारी कुल 03 है।
2. महाविद्यालय के परिसर का कुल एरिया 2.94 हेक्टेयर है।
3. महाविद्यालय में सूखा कचरा, गीला कचरा तथा प्रयोगशालाओं का वेस्ट निकलता है।
4. पानी का संरक्षण जमीन के अंदर storage tank बनाकर किया जाता है, तत्पश्चात् over head tanks में स्टोर करके पेय जल के रूप में तथा दैनंदिन निस्तारण हेतु उपयोग में लाया जाता है।
5. नगर निगम द्वारा Degradable एवं Non degradable कचरे का पृथक-पृथक ढंग से एकत्रीकरण कर सुरक्षित निस्तारण किया जाता है।
6. परिसर में प्लास्टिक के प्रयोग पर पूर्णतः प्रतिबंध है।

उपर्युक्त प्रकार से महाविद्यालय परिसर में कचरे के प्रबंधन का ऑडिट सामान्य तौर पर संतोष प्रद से बेहतर है। महाविद्यालय में वर्तमान में नवीन भवन निर्माणाधीन है जिसके कारण बिखरा बिल्डिंग मटेरियल तथा भवन सामग्री के कारण धूल की मात्रा ज्यादा है यद्यपि ये स्थिति अभी अस्थायी है।


(सहायक स्वास्थ्य अधिकारी)
नगर निगम
भोपाल
2/6/22

6- Energy Audit

Introduction – Energy Audit is an inspection survey and an analysis of energy conservation in a building, intended to reduce the amount of energy input without negatively affecting the output. The college conducted an energy audit to find opportunities for improvement and energy saving.

Methodology and Approach - The audit is carried out by data collection, data verification and detailed analysis of the data. The major areas of study include:-

- Energy bill analysis of the premises.
- Electrical supply and distribution system analysis.
- Lighting system analysis.
- Water pumping system analysis.
- Specific energy Consumption.

Electricity Bill 2021-22

S.N	Month	Unit Consumption	Bill Amount		विलंब भुगतान	Total Amount	Electricity load	avg. consumption	Amount paid by college	Month
			वर्तमान	बकाया						
1	Jan 2021	1226.2					35 kw	Year 2021(12 month) avg. consumption 1590.55 per month		
2	Feb 2021	1201.6					35 kw			
3	Mar 2021	1295					35 kw			
4	Apr 2021	1849.2					35 kw			
5	May 2021	1241.6	17972	22252	503	40727	35 kw		40727	May
6	Jun 2021	1039	16035	-503	200	16235	35kw		16235	Jun
7	July 2021	1491.2	15051	-200	186	15037	35 kw		14851	July
8	Aug 2021	1000	25716	321	0	26037	35kw		10865	Aug
9	Sept 2021	2791.6	24025	10865	436	35326	35 kw		24025	Sept
10	Oct 2021	2101.2	24033	34890	737	59660	35 kw		24033	Oct
11	Nov 2021	2045.8					35 kw		23368	Nov
12	Dec 2021	1804.2					35 kw		21082	Dec
	Total	(Total unit 12 month 19086.6)								
13	Jan 2022	1326.2	18118	0	226	18344	35 kw	Year 2022 (only 3 month) 1814.26	18118	Jan
14	Feb 2022	2176	24528	18118	533	43179	35 kw		24528	Feb
15	Mar 2022	1940.6	23215	0	290	23505	35 kw		23215	Mar
	Average 2021	1590.55 (nm)					35 kw		20.0872	
	2022	1814.26 (3 month)					35 kw			

2021 = 19086.6 RS.

2022 = 1814.26 Rs.

Lighting System

There are 3 floors in our premises and we have collected data of LED Tube lights, Air conditioners, coolers, coil fans, switch boards, Smart Boards, LED T.V, Computers, Xerox machines and microwaves, refrigerators different types of electrical as well as digital instruments used in laboratories and refrigerators room wise on each floor.

Table and Map of the room (Electrical Mapping).

Observation and Comments:-

- We use LED lighting luminaries in various rooms.
- It is observed that conduction of regular cleaning and maintenance of lighting fixtures in every 5-6 months to increase performance of lighting and also improve lux level is necessary.
- We observed that most of the fans were conventional 50W fans,
- It is suggested that the regular cleaning and maintenances of fans at least in every six months to increase performance of fans to reduce the electricity consumption.
- We observed that 2 pumps of capacity 150 HP pumps were installed in the college campus for potable water, flushing and gardening purpose.
- It is suggested to install solar pumping system and will get huge amount of savings.
- It is suggested to install solar system in the campus.

Tips for Energy Conservation in the Campus

- Shut off computers, printers and Xerox machine when not in use.
- Provide proper ventilation to water pumps/motors.
- Balance the three phase power supply.
- Minimize fan speed to save energy.
- Consider day lighting.
- Replace traditional lighting tubes & bulbs by LED.
- Use landscaping to advantage.
- Roof water harvesting is suggested to recycle water.

Lighting & Fan System

❖ Assessment of Electrical Appliances / Equipments for Electricity Consumption

For assessing the electricity consumption of different electrical appliances and digital devices (working & non- working condition) being used in the laboratories and in different classrooms of various floors of the college building, the number of all these equipments was counted room wise & floor wise and a comparative table was prepared. On the basis of the data collected, study and analysis for energy audit was done.

Maps and Table showing the Energy Audit Floor Wise are as follow:-

Formula for the Electricity Consumption –

Unit calculation:-

$$\text{kwh} = \frac{\text{watts} \times \text{time (hrs)}}{1000}$$

Lighting & Fan System

Ground Floor (8 hour working)

Room No.	Tube Light	Fan
1	6	5
2	6	5
3	7	5
4	18	8
5	7	7
6	14	8
7	14	8
8	9	4
9	6	6
10	5	2
11	4	1
Total	96	59
Average	8.727272727	5.363636364

Assessment of power saving

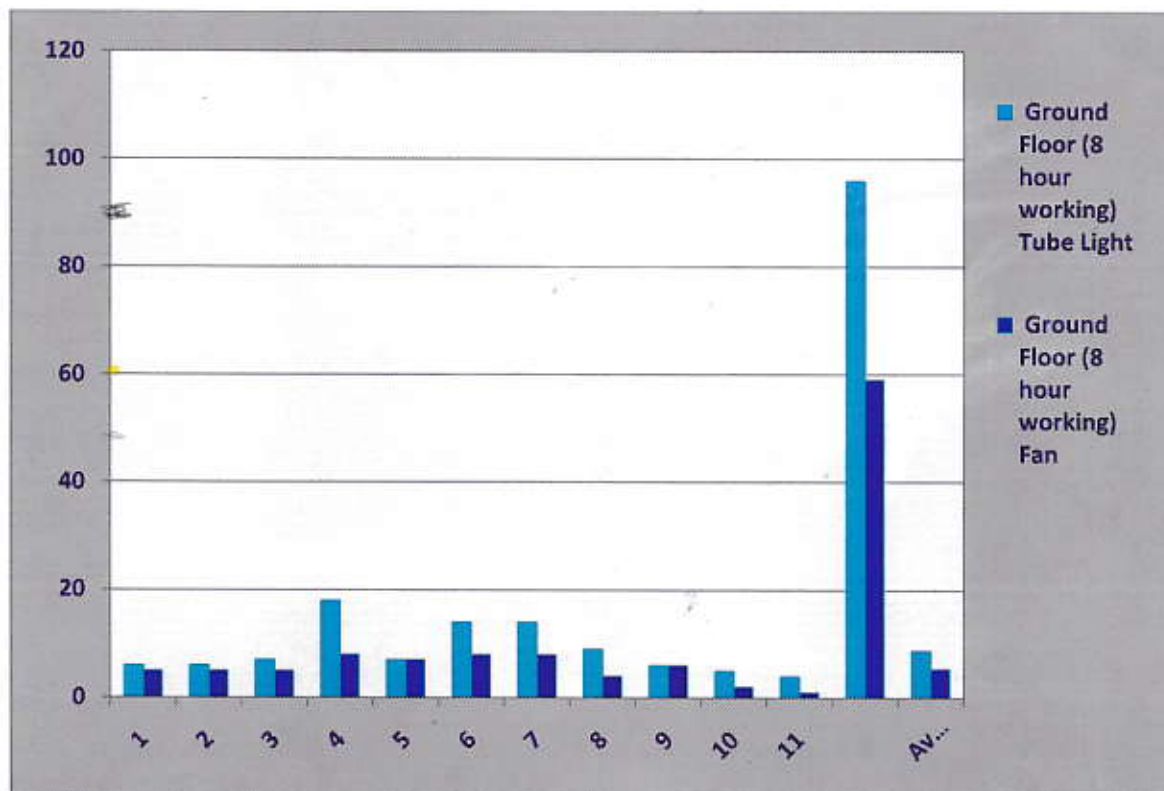
1 Tube light	1 day	0.12 kwh
	1 month	3.6 kwh
	1 year	43.8 kwh
All Tube Light	1 day	11.52 kwh
	1 month	345.6 kwh
	1 year	4204.8 kwh

Fan

1 Fan	1 day	0.32 kwh
	1 month	9.6 kwh
	1 year	116.8 kwh
All Fan	1 day	0.32 kwh
	1 month	9.6 kwh
	1 year	116.8 kwh

Coridor

Tube Light	Fan	Camera
10	1	3



First Floor (8 hour working)

Room No.	Tube Light	Fan
1	6	6
2	6	3
3	7	2
4	7	6
5	12	8
6	8	4
7	10	8
8	10	8
9	8	4
10	8	4
11	8	4
Total	90	57
Average	8.181818182	5.181818182

Assessment of power saving

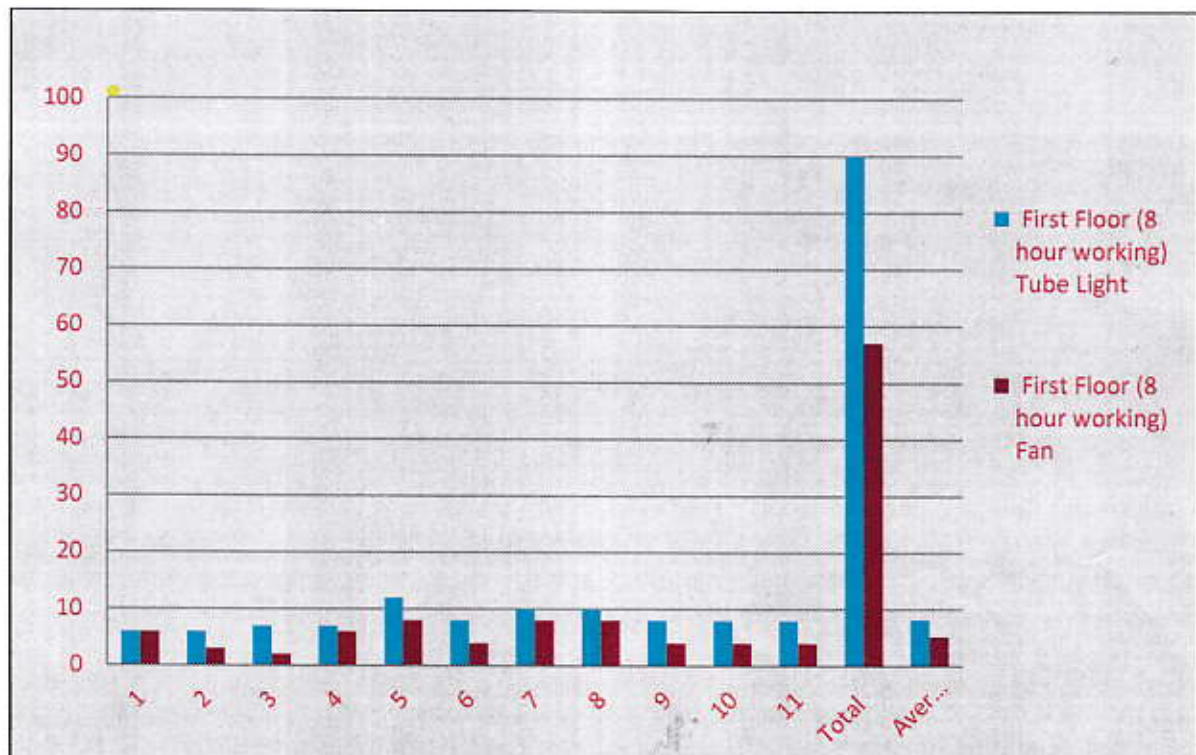
1 Tube light	1 day	0.12 kwh
	1 month	3.6 kwh
	1 year	43.8 kwh
All Tube light	1 day	10.8 kwh
	1 month	324 kwh
	1 year	394 kwh

Fan

1 Fan	1 day	0.32 kwh
	1 month	9.6 kwh
	1 year	116.8 kwh
All Fan	1 day	18.24 kwh
	1 month	547.2 kwh
	1 year	6657.6 kwh

Corridor

Tube Light	Fan	Camera
6	0	3



Second Floor (8 hour working)

Room No.	Tube Light	Fan
1	8	3
2	8	3
3	8	3
4	9	4
5	14	8
6	6	4
7	9	8
8	14	8
9	9	4
10	8	4
11	6	3
12	3	1
Total	102	53
Average	8.5	4.41666667

Assessment of power saving Equipments

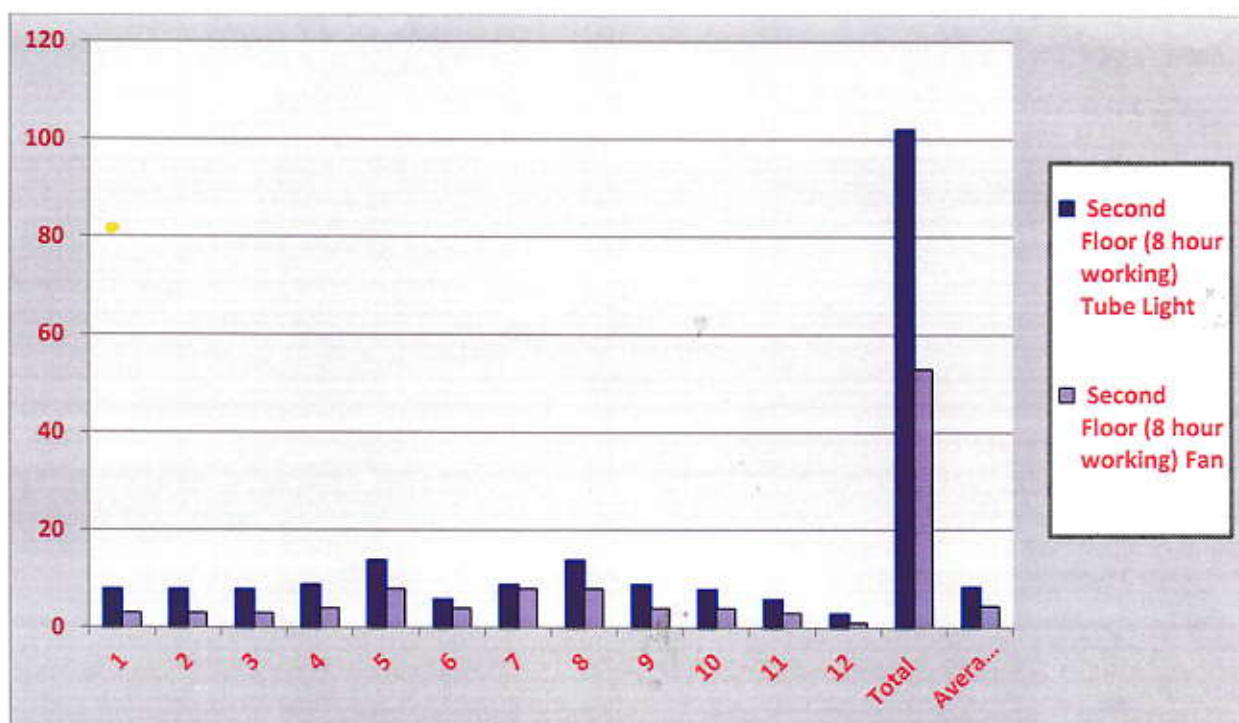
1 Tube light	1 day	0.12 kwh
	1 month	3.6 kwh
	1 year	43.8 kwh
All Tube light	1 day	12.24 kwh
	1 month	367.2 kwh
	1 year	4467.6 kwh

Fan

1 Fan	1 day	0.32 kwh
	1 month	9.6 kwh
	1 year	116.8 kwh
All Fan	1 day	16.96 kwh
	1 month	508 kwh
	1 year	6190.4 kwh

Corridor

Tube Light	Fan	Camera
6	0	3



Third Floor (8 hour working)

Room No.	Tube Light	Fan
1	6	2
2	4	5
3	8	2
4	26	19
5	5	4
6	5	4
7	5	4
8	5	4
9	16	8
10	6	8
Total	86	60
Average	8.6	6

Assessment of power saving

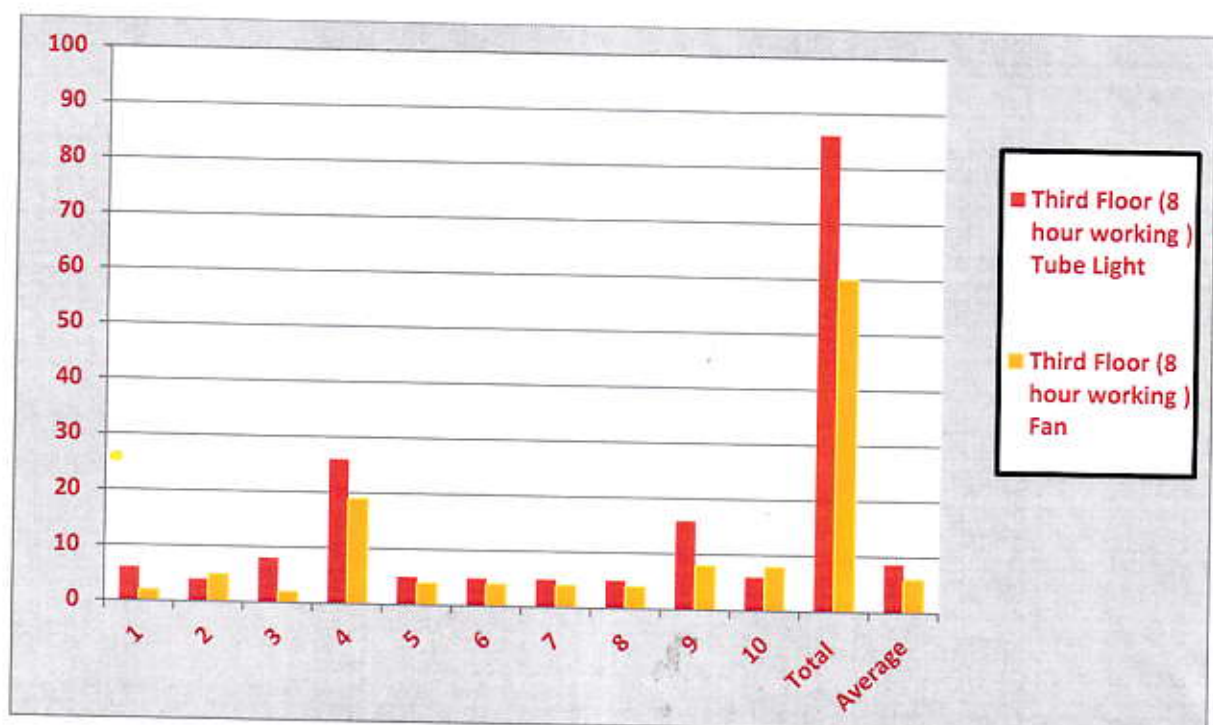
1 Tube light	1 day	0.12 kwh
	1 month	3.6 kwh
	1 year	43.8 kwh
All Tube light	1 day	9.72 kwh
	1 month	291.6 kwh
	1 year	3547.8 kwh

Fan

	1 day	0.32 kwh
	1 month	9.6 kwh
	1 year	116.8 kwh
All Fan	1 day	19.2 kwh
	1 month	576 kwh
	1 year	7008 kwh

Corridor

Tube Light	Fan	Camera
6	0	3



FRONT ELEVATION

- → Switch board
- H → Tube light
- 8 → Fan
- ⊗ → Exhaust fan
- ⊙ → wall fan
- ▬ → AC
- → Projector
- ⊕ → Camera
- ⊙ → wall fan

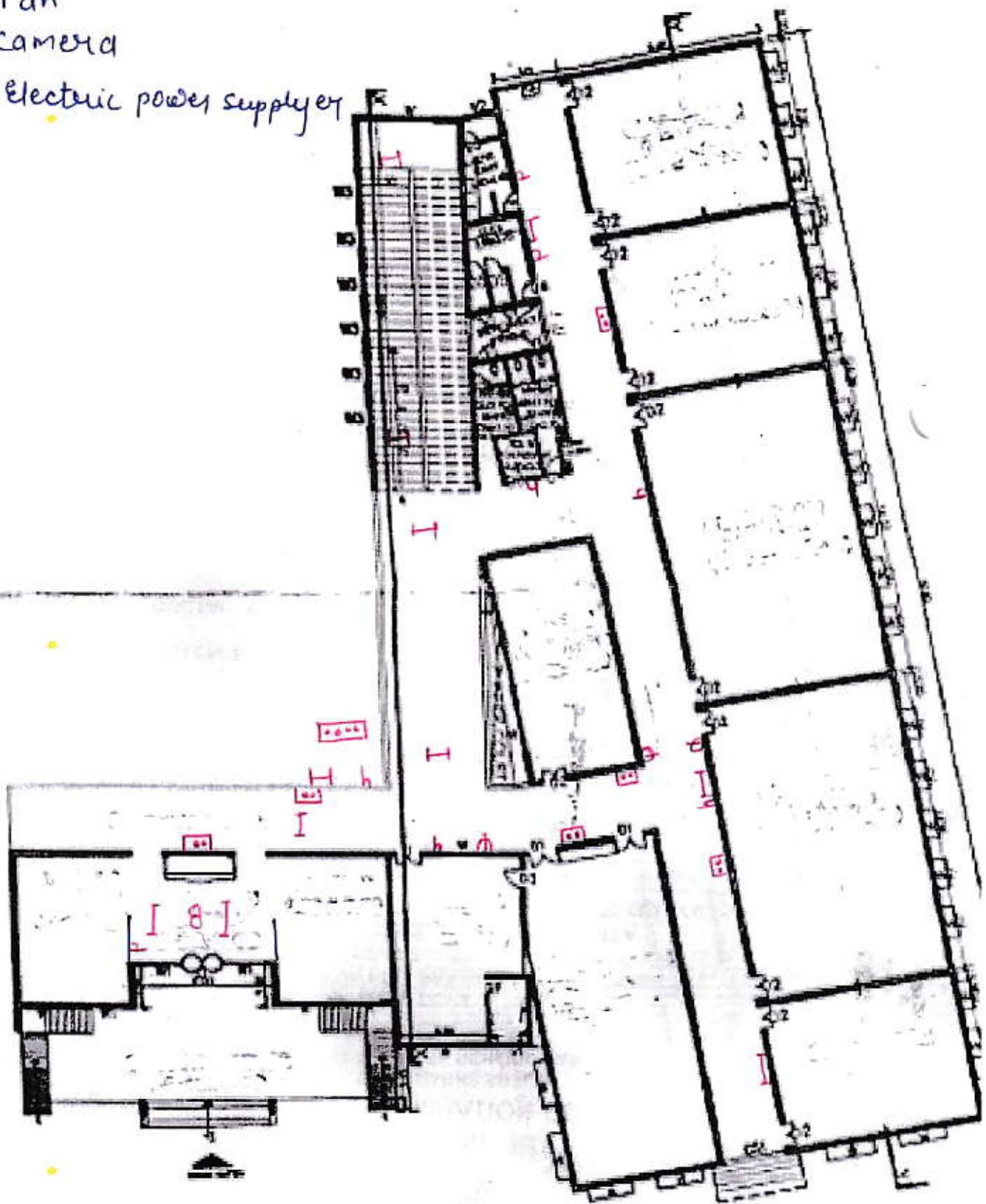


GROUND FLOOR PLAN (1: 200)

(Rooms)

FRONT ELEVATION

- ☐☐ ⇒ MCB
- |— ⇒ Tube light
- ⊗ ⇒ Fan
- ⊗ ⇒ Camera
- ☐☐☐☐ ⇒ Electric power supply



GROUND FLOOR PLAN (1: 200)
(copy)

Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College Bhopal

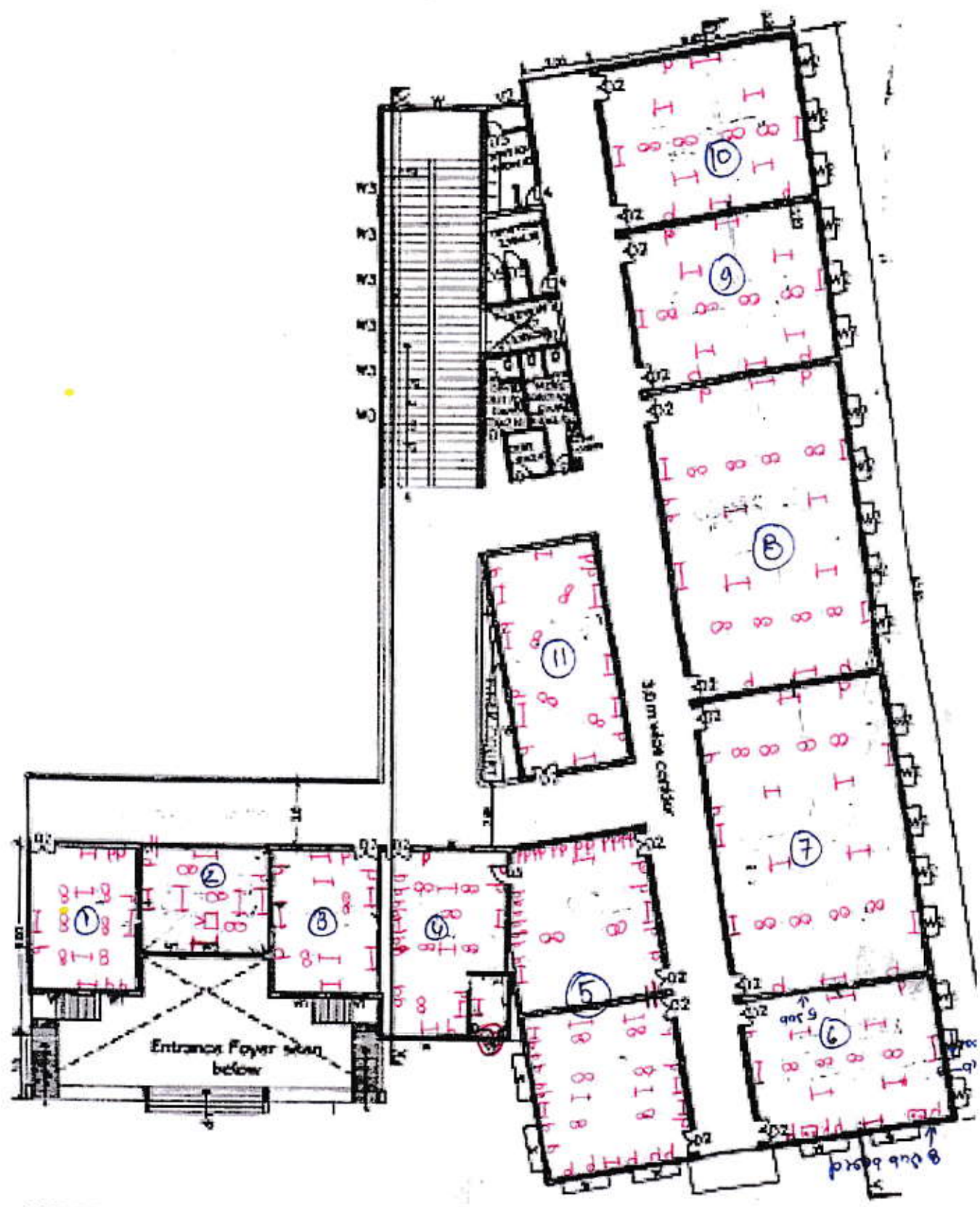
Ground Floor

Room No.	Fan	Tube Light	AC	PC	CCTV	Project oer	Cooler	exhaust fan	Refrigerat or	aqua gard	Printer	Microw ave	swich Board	celing Fan	Photoc opier	Aditonal appliances
1	4	6	0	3	0	0	1	0	0	0	3	0	6	1	0	0
2	5	6	0	1	0	0	1	0	0	0	1	0	4	0	1	0
3	5	7	2	1	0	0	0	1	1	0	1	0	6	1	0	LCD TV 02
4	8	17	0	1	4	1	0	0	0	0	0	0	9	0	0	Mic 01
5	6	7	2	3	1	1	0	0	mini 1	0	2	0	9	1	1	Mini Projector 01
6	8	14	0	1	0	1	0	0	0	0	0	0	14	0	0	0
7	8	14	0	0	0	0	0	0	0	0	0	0	14	0	0	Oven 01
8	4	7	2	0	0	0	0	0	0	0	0	0	9	0	0	AAS 01
9	6	7	0	2	0	0	0	0	1	0	1	1	8	1	0	Induction 01
10	2	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0
11	1	4	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Total	54	94	6	12	5	3	2	1	3	0	8	1	82	4	2	7
Average	5.182	8.545455	0.545	1.09	0.455	0.273	0.1818	0.09091	0.2	0	0.7273	0.091	7.455	0.3636	0.182	

Corido r	CCTV	MCB	Tube Light	Switch Board	Water Cooler	Additonal
	4	5	11	8	1	Fan 01

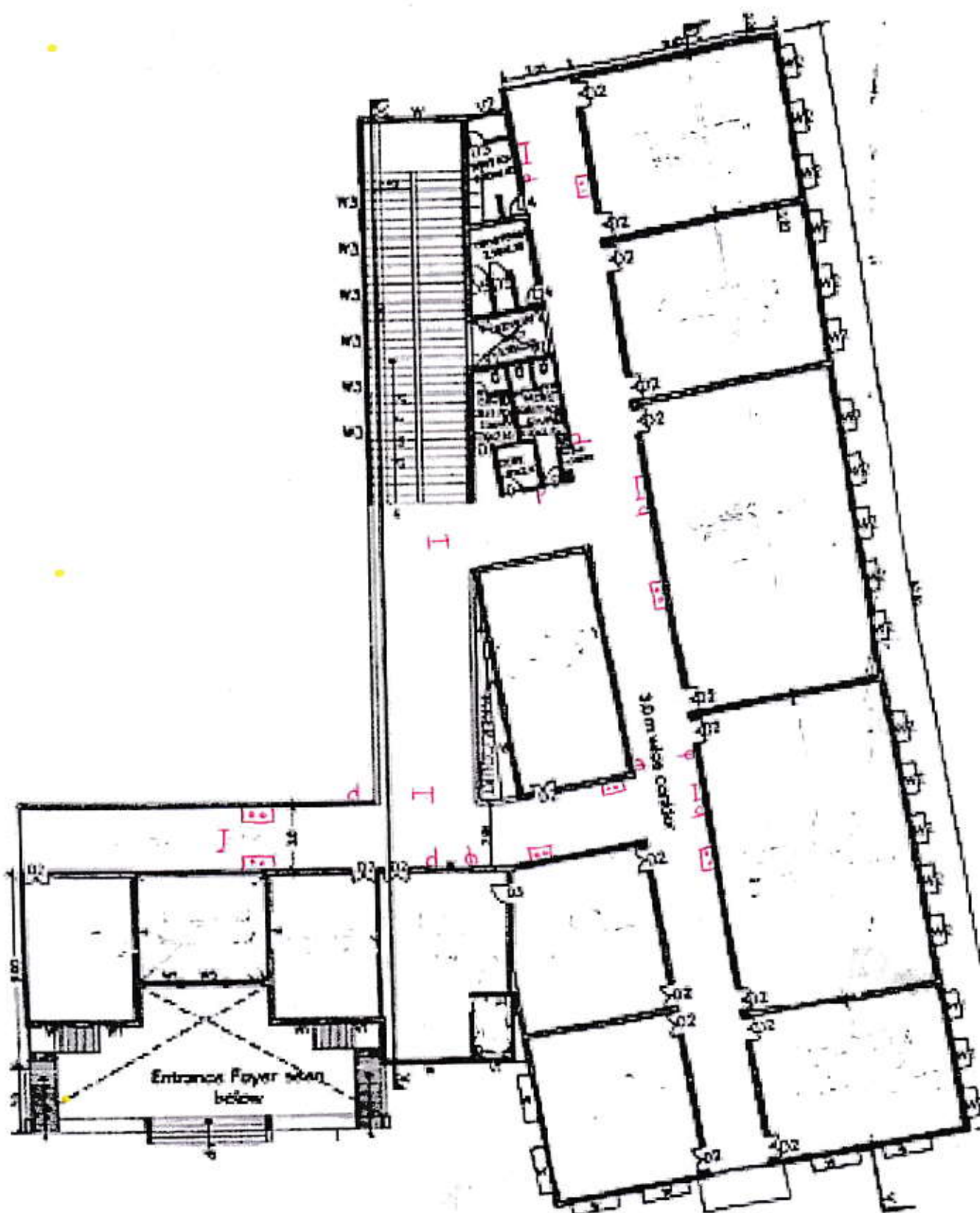
Wash Room

	no.	Tube Light	Fresh er	Board
Male	1	1	1	1
	2	1	1	0
Femal e	1	1	2	0
	2	1	1	0



FIRST FLOOR PLAN (1:200)

* (Rooms)



FIRST FLOOR PLAN (1:200)

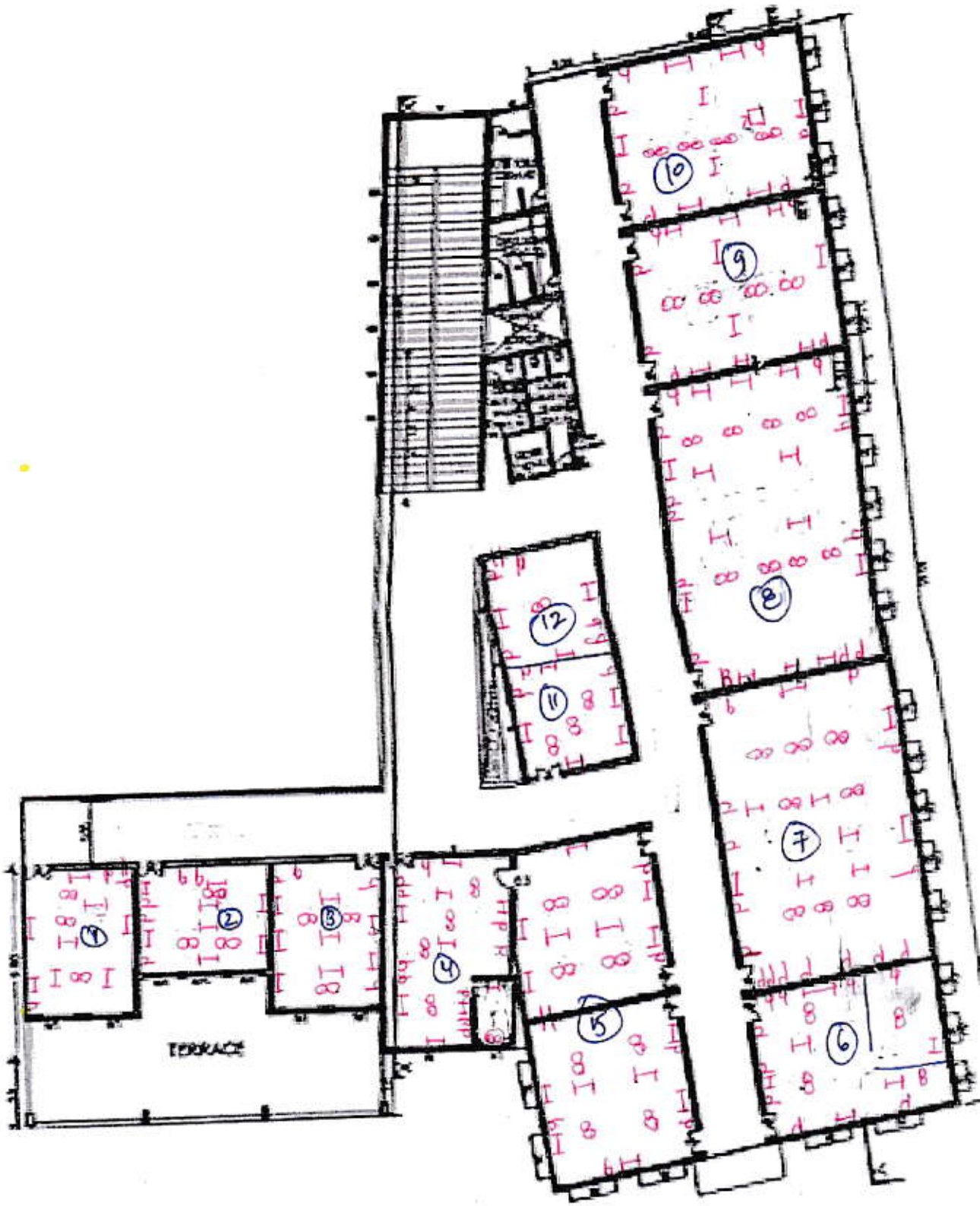
(corridor)

Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College Bhopal
First Floor

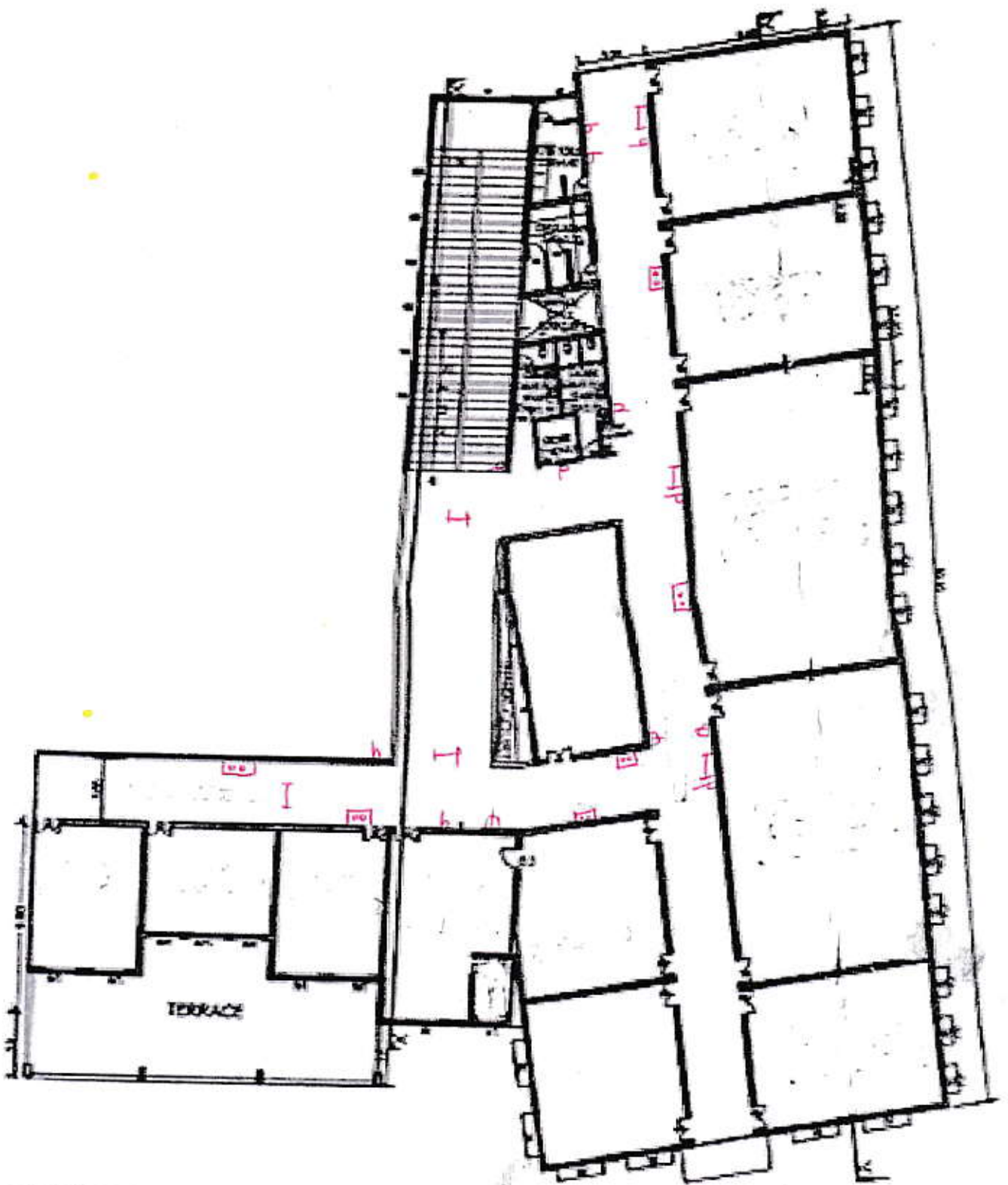
Room No.	Fan	Tube Light	AC	PC	CCTV	Projector	Cooler	exhaust fan	Refrigerator	aqua gard	Printer	Microwave	switch Board	ceiling Fan	Photocopier	Additional
1	6	6	0	1	0	0	1	0	1	1	1	0	6	0	0	0
2	3	6	0	0	0	1	0	0	0	0	0	0	2	0	0	0
3	2	7	0	0	0	0	0	0	0	0	0	0	4	0	0	0
4	6	5	0	1	0	0	0	1	1	0	1	0	11	0	0	0
5	8	12	0	0	0	0	0	0	0	0	0	0	40	0	0	0
6	4	8	0	21	1	0	0	0	0	0	1	0	25	0	0	M/CB+lepi
7	8	10	0	0	0	0	0	0	0	0	0	0	5	0	0	0
8	8	10	0	0	0	0	0	0	0	0	0	0	6	0	0	0
9	4	8	0	2	0	0	1	0	2	0	1	0	3	0	0	0
10	4	8	0	0	0	0	1	0	0	0	0	0	3	0	0	0
11	4	8	0	1	0	0	2	0	1	0	0	0	7	0	0	0
Total	57	88	0	26	1	1	5	1	5	1	4	0	112	0	0	0
Average	5.18182	8	0	2.3636364	0.09090909	0.0909091	0.45454545	0.09090909	0.45454545	0.09091	0.36363636	0	10.182	0	0	

Corridor	CCTV	MCB	Tube Light	Switch Board	Water Cooler	Additional
	3	7	6	6	1	

Wash Room					
	no.	Tube Light	Freshner	Board	
Male	1	1	1	1	
	2	1	1	0	
Female	1	1	2	0	
	2	1	1	0	



SECOND FLOOR PLAN (1: 200)



SECOND FLOOR PLAN (1: 200)

(copy)

Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College Bhopal
Second Floor

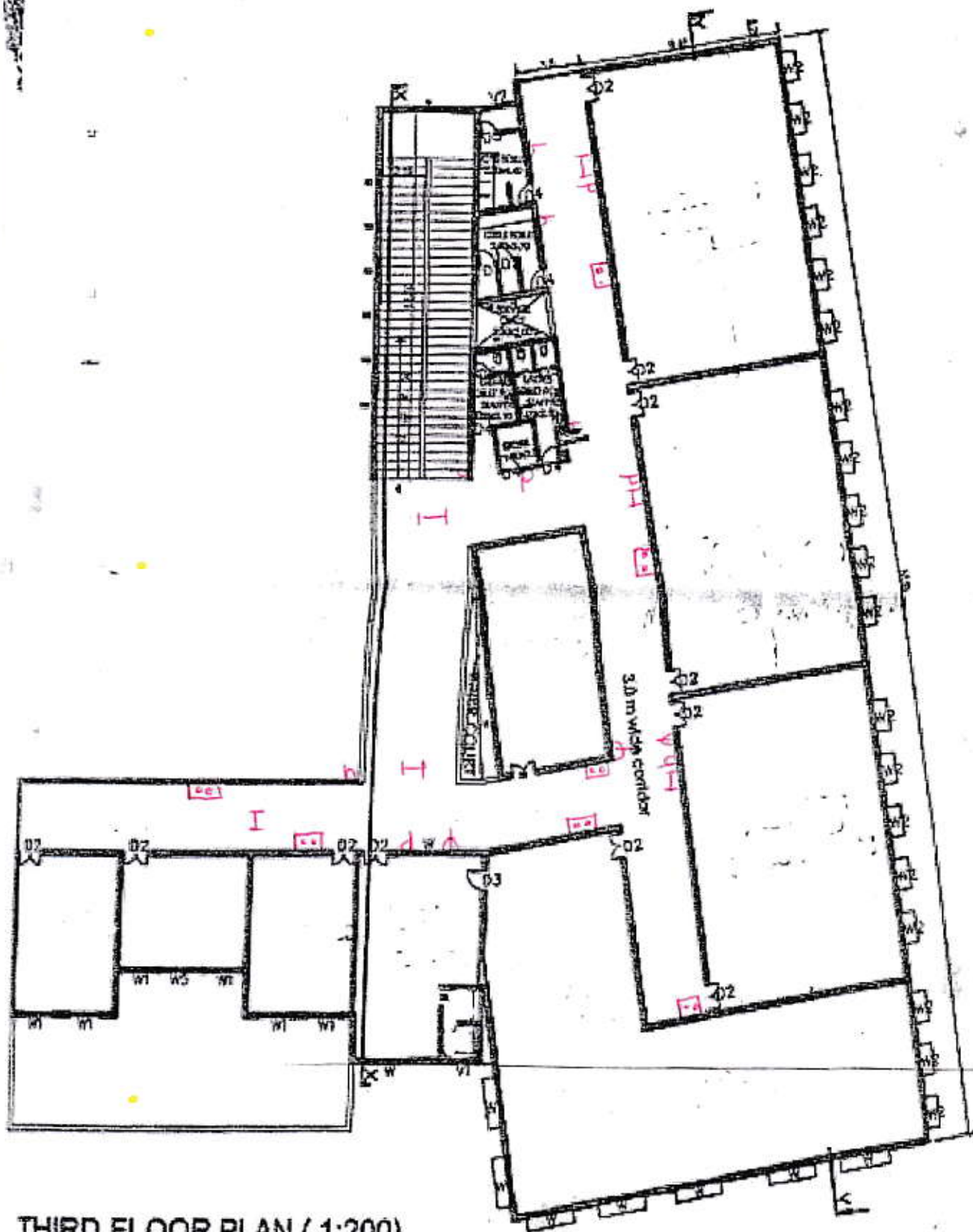
Room Number	Fan	Tube Light	AC	PC	CCTV	Projector	Cooler	exhaust fan	Refrigerator	aqua gard	Printer	Microwave	Board	ceiling Fan	Photocopier	Additional
1	3	8	0	0	0	0	1	0	1	0	0	0	3	0	0	0
2	3	8	0	0	0	0	0	0	0	0	0	0	5	0	0	0
3	3	8	0	0	0	0	0	0	0	0	0	0	4	0	0	6 machine
4	4	9	0	2	0	0	1	1	1	0	3	1	13	0	1	0
5	8	14	0	0	0	0	1	0	2	0	0	1	6	0	0	0
6	3	6	0	0	0	0	1	0	1	0	0	0	11	0	0	10 machine
7	8	10	0	0	0	0	0	0	0	0	0	0	15	0	0	3 machine
8	8	14	0	1	0	0	2	0	0	1	1	1	12	0	0	0
9	4	10	0	0	0	0	0	0	0	0	0	0	6	0	0	0
10	4	8	0	0	0	1	1	0	2	0	0	2	7	0	0	0
11	3	5	0	1	0	0	0	0	1	0	1	0	3	0	0	0
12	1	3	0	1	0	0	0	0	0	0	0	0	5	0	1	0
Total	52	103	0	5	0	1	7	1	8	1	5	5	90	0	2	19
Average	4.3333	8.58333333	0	0.41667	0	0.08333333	0.5833	0.08333	0.66666667	0.0833	0.41667	0.417	7.5	0	0.17	

Corridor	CCTV	MCB	Tube Light	Switch Board	Water Cooler	Additional
	3	6	5	6	1	

Wash Room				
	no.	Tube Light	Freshener	Board
Male	1	1	1	1
	2	1	1	0
Female	1	1	2	0
	2	1	1	0



THIRD FLOOR PLAN (1:200)
(Rooms)



THIRD FLOOR PLAN (1:200)

(Lousigday)

Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College Bhopal

Third Floor

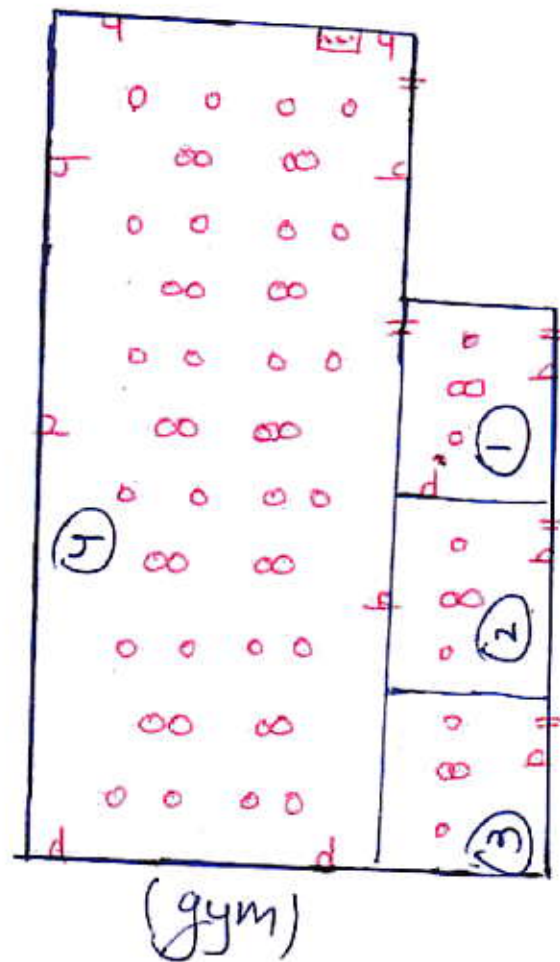
Room Number	Fan	Tube Light	AC	PC	CCTV	Projector	Cooler	exhaust fan	Refrigerator	aqua gard	Printer	Micro wave	switch Board	ceiling Fan	Photocopier	Additional appliances
1	2	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0
2	5	4	0	0	0	0	0	0	0	0	0	0	3	0	0	0
3	2	7	0	0	0	0	0	0	0	0	0	0	4	0	0	0
4	19	26	0	2	3	0	2	1	1	0	1	0	26	0	0	0
5	4	4	0	0	0	0	0	0	0	0	0	0	5	0	0	0
6	4	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0
7	4	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0
8	4	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0
9	8	16	0	0	0	0	0	0	0	0	0	0	10	0	0	0
10	8	6	0	0	0	0	0	0	0	0	0	0	10	0	0	0
Total	10	60	0	2	3	0	2	1	1	0	1	0	78	0	0	0
Average		6	8.3	0	0.2	0.3	0	0.2	0.1	0.1	0	0	7.8	0	0	

Corridor	CCTV	MCB	Tube Light	Switch Board	Water Cooler	Additional
	3	7	6	8		

Wash Room

	no.	Tube Light	Fresher	Board
Male	1	1	1	1
	2	1	1	0
Female	1	1	2	0
	2	1	1	0

Top Floor (gym)



- 1 = Sports office Room
- 2 = Changing room
- 3 = Store room
- 4 = gym

○ ⇒ LED light

Z = Switch board

∞ = Fan

MCB ⇒ M.C.B



Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College Bhopal

Top Floor (Gymnasium)

Room No	Fan	LED Light	Swich	MCB
1	1	2	2	0
2	1	2	1	0
3	1	2	1	0
4 (Gymnasium)	10	24	8	1
Total	13	30	12	1

Assisment of power saving

1 LED light	1 day	0.12 kwh
	1 month	3.6 kwh
	1 year	43.8 kwh
	1 day	3.6kwh
All LED light	1 month	108 kwh
	1 year	1314 kwh

1 Fan	1 day	0.32 kwh
	1 month	9.6 kwh
	1 year	116.8 kwh
	1 day	4.16 kwh
All Fan	1 month	124.8 kwh
	1 year	1518.4 kwh

**Electricity Consumption Out Side the
College Building**

No.	Out side of the College	Quantity
1	Water Pump	2
2	Switch Board	2
3	Construction Connection	1
4	Light	7



Govt. Dr. Shyama Prasad Mukharjee Science & Commerce College Bhopal

Total Electricity Load of College

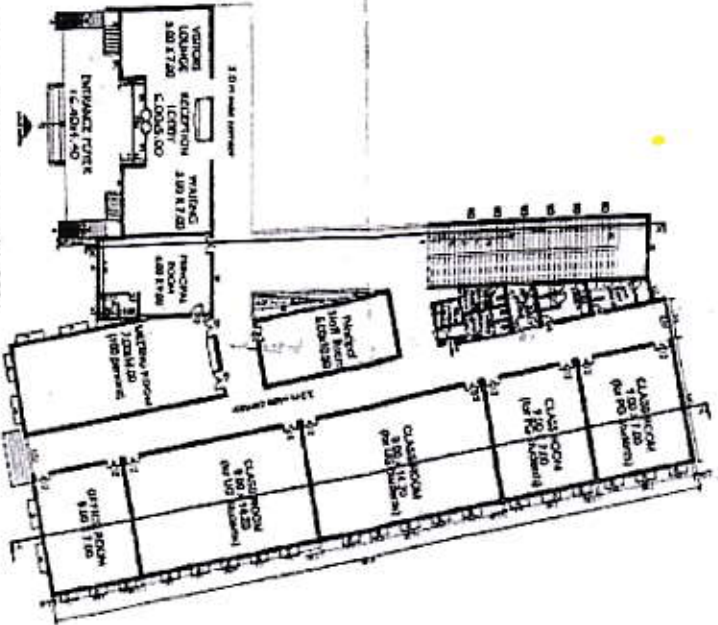
Floor No.	Fan	Tube Light	AC	Computer	CCTV	Projector	cooler	Exhaust Fans	Refrigerator	aqaugard	printer	microwave	switch board	ceiling fan	photocopie r	MCB	water cooler	additional appliances
Ground floor	54	109	6	12	9	3	2	6	3	0	8	1	90	4	2	7	1	2
First floor	57	98	0	26	4	1	5	6	5	1	4	0	119	0	0	7	1	2
Second floor	52	113	0	5	3	1	7	6	8	1	5	5	97	0	2	7	1	19
Third floor	60	93	0	2	6	0	2	6	1	0	1	0	87	0	0	7	0	7
fourth floor	13	30	0	0	0	0	0	0	0	0	0	0	12	0	0	1	0	0
Out Side Of the College	0	7	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2 motor
Total	236	450	6	45	22	5	16	24	17	2	18	6	407	4	4	29	3	37

FRONT ELEVATION

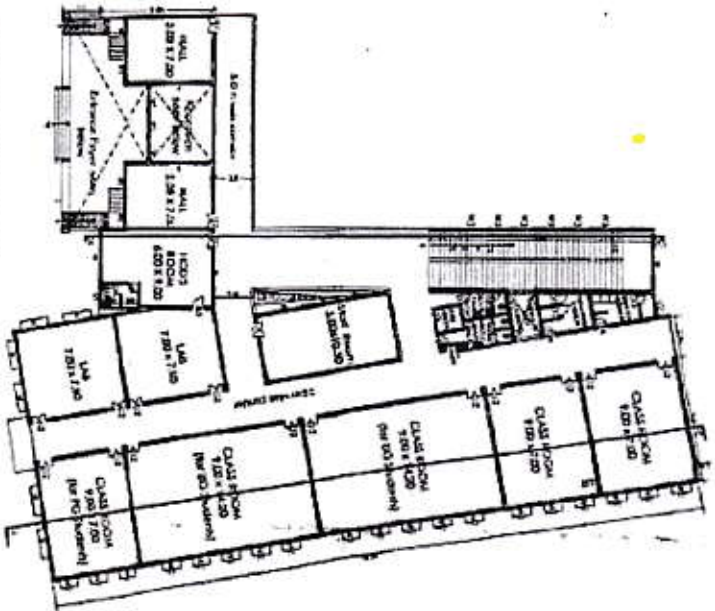
SIDE ELEVATION

SECTION

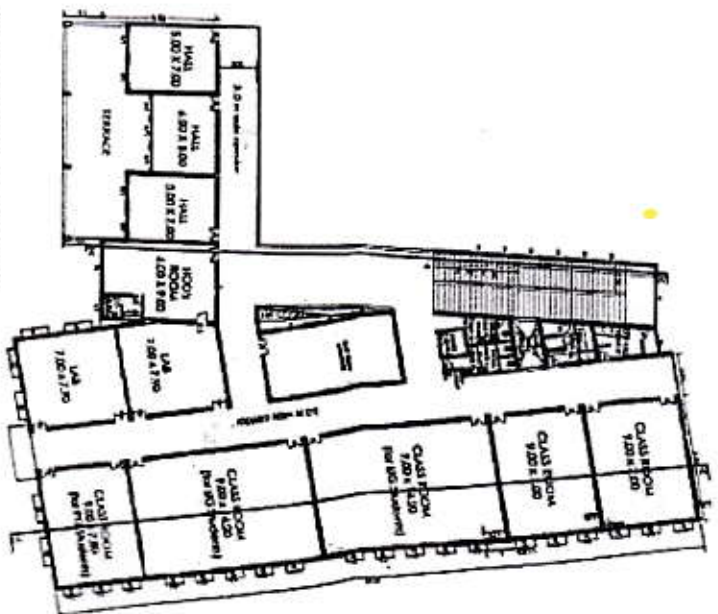
GROUND FLOOR PLAN (1:200)



FIRST FLOOR PLAN (1:200)



SECOND FLOOR PLAN (1:200)



EPCO
Engineering Planning & Construction Organisation
B-1, Sector 10, Gurgaon
Haryana - 122 002, India
Phone: +91 122 2441151, 2441152, 2441153
Fax: +91 122 2441154, 2441155, 2441156

PROJECT

PROPOSED GOVT. BENAZEER COLLEGE BUILDING
(PHASE-1), AT KOLAR ROAD, BHOPAL (M.P.)



CLIENT

Capital Project Administration,
Division No.1, Bhopal

Conclusion

It can be concluded by the study of the figures shown in the Electricity bill that the average expenditure on electricity during the year 2021 is Rs.19465/- and the average expenditure on electricity from January 2022 to March 2022 is Rs. 21,953.

The load sanctioned by the M.P. Power Management Company Ltd. to our college is 35kw. So the average units of Electricity consumed by the college during the year 2021 are 1590.55 units / month. While the average units of electricity consumed by the college during the year 2022 are 1814.26 units / month.

7- Water Quality Assessment and Analysis

Water testing (physical and chemical) of the tube-well of the campus was conducted through Quality control (water) Laboratory Nagar Nigam, Arera Hills, Bhopal (M.P.), a government body. The report is as follows:

The pH of water, taken from tube-well was found to be 7.5, which is very much within the permissible limit (6.5-8.5) as per the guidelines of BIS 10500-2012 for drinking water. Other parameters, like total alkalinity, chloride, nitrate, TDS, Calcium, Magnesium etc. were found to be in normal range.

Bacteriological analysis of the water from the same tube-well revealed the number of bacterial load as 540/100 ml, which is relatively higher than the prescribed range, however, this bacterial load can be removed effectively through using Aqua Guard. The quality of tube-well-water will, therefore become suitable after taking necessary action with regard to point of view of health.



QUALITY CONTROL (WATER) LABORATORY
NAGAR NIGAM, Arera Hills, Bhopal.(M.P.) 462003

ANALYSIS REPORT								
Kind of sample - WATER SAMPLE								
PARTICULARS OF SENDER - SHYAMA PRASAD MUKHARJI POST GRADUAT COLLEGE KOLAR BHOPAL								
Ref - Q		Date -02.08. 2022						
PARTICULARS OF SAMPLE					collected by Nagar Nigam			
		Place of collection and details of sample					Date	
1		TUBE WELL WATER					02.08.2022	
2		WATER COOLER					02.08.2022	
3								
4								
PARTICULARS TO BE FILLED IN THE LABORATORY								
Date of Receipt - 02.08.2022			Lab. Reference No			Tested on. 02.08.2022		
NATURE OF STUDY - CHEMICAL ANALYSIS								
No.	Characteristics	Unit	As Per BIS -10500:2012 For Drinking Water		Results			
			Requirement (Desirable Limit)	Permissible Limit in the absence of Alternate Source	Sample 1	Sample 2	Sample 3	Sample 4
PHYSICAL TEST								
1	Temperature	°C	-----	-----	24.4	24.4		
2	Turbidity	NTU	1.0	5.0	1.3	1.0		
3	Colour	Hazen Units	5	15	NIL	NIL		
4	Odour	-----	Agreeable	Agreeable	NIL	NIL		
ROUTINE CHEMICAL TEST								
5	PH	PH scale	6.5 to 8.5	6.5 to - 8.5	7.68	7.81		
6	Conductivity at 25°C	Micromhos per cm. ²	-----	-----	-	-		
7	Phenolphthalein Alkalinity	Mg / l	-----	-----	-	-		
8	Total Alkalinity as CaCO ₃	Mg / l	200	600	280	282		
9	Chloride as Cl	Mg / l	250	1000	88	89		
10	Nitrate as NO ₃	Mg / l	45	45	0.2	0.2		
11	Total Hardness as CaCO ₃	Mg / l	200	600	300	296		
12	Calcium as Ca ⁺⁺	Mg / l	75	200	64	64		
13	Magnesium as Mg ⁺⁺	Mg / l	30	100	33.6	32.64		
14	Total Solids	Mg / l	500	2000	-	-		
15	Total Dissolved Solids	Mg / l	500	2000	461	474		
16	Lead Pb	Mg / l	0.1	0.1	-	-		
17	Sulphate as SO ₄	Mg / l	200	400	42	40		
18	Residual Chlorine	Mg / l	0.2	1.0	-	-		
19	iron		0.1	1.0	0.09	0.09		
NATURE OF STUDY - BACTERIOLOGICAL ANALYSIS								
20	MPN Coliform	Per 100 ml	Nil (for treated water or water in distribution system)			-	-	-
21	Fecal Coliform	Per 100 ml	Nil			80	70	-

NOTE:- It is recommended that acceptable limit is to be implemented. Values in excess of those mentioned under "acceptable" render the water not suitable, but still may be tolerated in the absence of an alternative source but upto the limits indicated under the "permissible limit in the absence of alternate source" in column 4, above which the sources will have to be rejected.

Chemist's signature

Remarks if any


INCHARGE
5MGD FILTER PLANT LABORATORY
NAGAR NIGAM Bhopal.(M.P.) 462003

No. _____ /Lab./Nagar Nigam/BPL Date

QUALITY CONTROL (WATER) LABORATORY
NAGAR NIGAM, Arera Hills, Bhopal.(M.P.) 462003

ANALYSIS REPORT			
Kind of sample- WATER SAMPLE			
PARTICULARS OF SENDER - GOVT.DR. SHYAMA PRASAD MUKHARJI COLLEGE KOLAR ROAD BHOPAL			
Ref - Q		Date - 05.07.2022	
PARTICULARS OF SAMPLE			Not collected by Nagar Nigam
	Place of collection and details of sample		Date
1	H - SECTOR RAJHARSH KOLAR ROAD BHOPAL		TUBE WELL WATER 05.07.2022
2			
3			
4			
PARTICULARS TO BE FILLED IN THE LABORATORY			
Date of Receipt - 05.07.2022		Lab. Reference No	
		Tested on - 05.07.2022	

Date of Receipt: 20/01/2025

NATURE OF STUDY - CHEMICAL ANALYSIS								
No.	Characteristics	Unit	As Per BIS -10500:2012 For Drinking Water		Results			
			Requirement (Desirable Limit)	Permissible Limit in the absence of Alternate Source	Sample 1	Sample 2	Sample 3	Sample 4
PHYSICAL TEST								
1	Temperature	°C	-----	-----	28.0			
2	Turbidity	NTU	1.0	5.0	0.5			
3	Colour	Hazen Units	5	15	NIL			
4	Odour	-----	Agreeable	Agreeable	NIL			
ROUTINE CHEMICAL TEST								
5	PH	PH scale	6.5 to 8.5	6.5 to 8.5	7.50			
6	Conductivity at 25°C	Micromhos per cm. ²	-----	-----	-			
7	Phenolphthalein Alkalinity	Mg / l	-----	-----	-			
8	Total Alkalinity as CaCO ₃	Mg / l	200	600	332			
9	Chloride as Cl	Mg / l	250	1000	80			
10	Nitrate as NO ₃	Mg / l	45	45	0.5			
11	Total Hardness as CaCO ₃	Mg / l	200	600	370			
12	Calcium as Ca++	Mg / l	75	200	84			
13	Magnesium as Mg++	Mg / l	30	100	38.4			
14	Total Solids	Mg / l	500	2000	-			
15	Total Dissolved Solids	Mg / l	500	2000	466			
16	Suspended Solids	Mg / l	-	-	-			
17	Sulphate as SO ₄	Mg / l	200	400	43			
18	Residual Chlorine	Mg / l	0.2	1.0	-			
19	Iron		0.1	1.0	0.04			
NATURE OF STUDY - BACTERIOLOGICAL ANALYSIS								
20	MPN Of Coliform	Per 100 ml	Nil (for treated water or water in distribution system)		540	-	-	-
21	Fecal Coliform (TTC)	Per 100 ml	Nil		NIL	-	-	-

NOTE:- It is recommended that acceptable limit is to be implemented. Values in excess of those mentioned under "acceptable" render the water not suitable, but still may be tolerated in the absence of an alternative source but upto the limits indicated under the "permissible limit in the absence of alternate source" in column 4, above which the sources will have to be rejected.

Chemist's signature

Remarks if any

No. _____ /Lab./Nagar Nigam/BPL Date



IN-CHARGE
SMGD FILTER PLANT LABORATORY
NAGAR NIGAM, Bhopal (M.P.) 462003
SMGD Filter Plant

8- Soil Quality Assessment and Analysis

The pH of soil is found to be normal which is suitable for vegetation. The soil is found deficient in micronutrients, Zinc (Zn) and Boron (B) while macronutrients, Nitrogen (N) and Phosphorus (P) are in sufficient quantity. Rapidly growing vegetation of the campus reveals this fact.



SOIL TESTING LABORATORY

1. मृदा में पोषक तत्वों का उपयुक्त स्तर नहीं होने की स्थिति में अनुशंसित मात्रा के अनुसार देशी गोबर खाद या आधी मात्रा में कैप्टेन खाद के साथ उर्वरकों की उपलब्धता के अनुसार विकल्प एक या विकल्प दो का प्रयोग करें।
2. जहाँ सूक्ष्म तत्वों का स्तर उपयुक्त स्तर से कम है वहाँ अनुशंसित मात्रा अनुसार सूक्ष्म तत्वों वाले उर्वरकों को अंतिम वखरनी के पूर्व खेत में मिला दे या खड़ी फसल में छिड़काव करें।
3. अनाज वाली फसलों में नाइट्रोजन वाले उर्वरकों की आपूर्ति मात्रा फास्फोरस व पोटाश की पूरी मात्रा बुवाई के समय सीढ़ कम फर्टीलाइजर ड्रिल का प्रयोग करते हुए करें तथा नाइट्रोजन की शेष मात्रा को 2 या 3 बराबर भागों में बाँट कर प्रथम सिंचाई के समय एवं 20-25 दिन के अंतराल में उपयोग करें। दलहनी एवं विलहनी फसलों में अनुशंसित उर्वरकों की पूरी मात्रा बुवाई के समय करें।
4. दलहनी फसलों में राइजोबियम एवं अनाज वाली फसलों में एजोटोबैक्टर गन्ना में एजोटोबैक्टर तथा सभी फसलों में पी एस बी. कल्चर से बीज या मृदा उपचार फसलों की उपज एवं मृदा स्वास्थ्य हेतु लाभकारी होता है।
5. हरी खाद सन/ढेंवा को बुवाई कर 30-35 दिनों बाद पलट देने से मृदा में जैविक कार्बन बढ़ने से मृदा स्वास्थ्य में सुधार होता है। तथा 80 से 100 कि.ग्रा. प्रति हैक्टर वायुमण्डलीय नाइट्रोजन का भूमि में स्थाईकरण होता है।
6. स्वस्थ मृदा से ही अधिक उपज प्राप्त की जा सकती है, बीमार मृदा से नहीं। मृदा को स्वस्थ बनाने के लिए कैप्टेन खाद उपलब्धता अनुसार 5 से 7 टन प्रति हैक्टर या गोबर खाद 10 से 12 टन प्रति हैक्टर का प्रयोग करें।
7. मृदा को स्वस्थ बनाने हेतु खरपतवासे, कीटा एवं रोगों के नियन्त्रण हेतु अंतिम विकल्प के रूप में ही खरपतवारनाशक, कीटनाशक एवं फफूंदनाशक दवा का प्रयोग करें। इसके पूर्व जैविक/समन्वित प्रदूषण से खरपतवार/कीटा/रोग का नियन्त्रण हेतु उपाय करें। फसल अवशेषों को खेतों में न जलायें, अन्यथा मृदा में उपस्थित लाभदायक जीवाणु के नष्ट होने से फसलों हेतु पोषक तत्वों की उपलब्धता प्रभावित होने से उपज कम होगी।
8. मृदा में ज्यादा क्षारीयता होने पर क्षारीयता को दूर करने के लिए जिप्सम की सिफारिश मात्रानुसार अंतिम वखरनी के समय खेत में मिलावें।
9. मृदा परीक्षण हेतु अपने खेत से 10-12 स्थान प्रति हैक्टेयर से मृदा नमूना लेकर एकत्र कर कृषक मित्र अथवा क्षेत्रीय ग्रामीण कृषि विस्तार अधिकारी को उपलब्ध करावें।
10. कृषक भाई नमूने का परिणाम क्षेत्रीय ग्रामीण कृषि विस्तार अधिकारी से या स्वयं प्रयोगशाला से प्राप्त कर सकते हैं।



किसान कल्याण तथा कृषि विकास
विभाग, मध्यप्रदेश शासन



मृदा स्वास्थ्य

कार्ड

स्वस्थ धरा - खेत हरा

किसान का नाम

सम्पत्ति क्र - 01

मृदा स्वास्थ्य कार्ड संख्या

30 / 2022-23

भारतीय परीक्षण प्रयोगशाला, भोपाल

कृषि एवं सहकारी विभाग
कृषि एवं किसान कल्याण
मंत्रालय, भारत सरकार



किसान कल्याण तथा
कृषि विकास विभाग
मध्यप्रदेश

प्रयोगशाला का नाम - मिट्टी परीक्षण प्रयोगशाला, भोपाल			
वर्ष - 2022-23	किसान एवं मृदा नमूना विवरण	क्रिड नं. 0	
रजिस्ट्रेशन नं.	30	सेम्पल क्रमांक 01	
विशेष का नाम	Not Available	बॉ. खानाप्रसाद मुखर्जी कॉलेज भोपाल	
आधार नम्बर	Not Available	GEM	
पिता / पति का नाम	कोतार	क्रिड नं. फेंदा	
जाति	Not Available		
खान	Not Available		
खसरा नं.	Not Available		
खेत का रजिस्ट्रेशन	सिंचित		
ग्राम			

मृदा परीक्षण परिणाम				
क्र.	पैरामीटर	परिणाम	ईकाई	मानक स्तर
1	पी. एच. (pH)	7.34	-	अन्तर्गत 6.5 से कम सामान्य 6.5 से 8.5 तक क्षारिय 8.5 से अधिक
2	ई.सी. (EC)	0.77	मि.मो./से.मी.	सामान्य 1 से कम मध्यम 1 से 3 तक हानिकारक 3 से अधिक
3	जैविक कार्बन (OC)	0.30	प्रतिशत	निम्न 0.5 से कम मध्यम 0.5 से 0.75 तक उच्च 0.75 से अधिक
4	उपलब्ध नाइट्रोजन (N)	142.00	कि.ग्रा./हे.	निम्न 280 से कम मध्यम 280 से 560 तक उच्च 560 से अधिक
5	उपलब्ध फास्फोरस (P)	12.00	कि.ग्रा./हे.	निम्न 10 से कम मध्यम 10 से 25 तक उच्च 25 से अधिक
6	उपलब्ध पोटेशियम (K)	186.00	कि.ग्रा./हे.	निम्न 120 से कम मध्यम 120 से 280 तक उच्च 280 से अधिक
7	उपलब्ध सल्फर (S)	23.00	पी.पी.एम.	कम 10 से कम पर्याप्त 10 से अधिक
8	उपलब्ध जिंक (Zn)	0.55	पी.पी.एम.	कम 0.6 से कम पर्याप्त 0.6 से अधिक
9	उपलब्ध आयरन (Fe)	6.15	पी.पी.एम.	कम 4.5 से कम पर्याप्त 4.5 से अधिक
10	उपलब्ध मैंगनीज (Mn)	3.15	पी.पी.एम.	कम 2 से कम पर्याप्त 2 से अधिक
11	उपलब्ध कॉपर (Cu)	1.96	पी.पी.एम.	कम 0.2 से कम पर्याप्त 0.2 से अधिक
12	उपलब्ध बोरान (B)	0.45	पी.पी.एम.	कम 0.5 से कम पर्याप्त 0.5 से अधिक

सन्दर्भ उपज के लिये उर्वरक सिफारिशें (जैविक खाद के साथ)				
क्र.	फसल	उर्वरक संयोजन - 1	उर्वरक संयोजन - 2	
		अनुपात कि.ग्रा./हे.	अनुपात कि.ग्रा./हे.	
		यूरिया	फास्फोरस	पोटाश
1	सोयाबीन	54	34	0
2	मक्का	272	50	210
3	अरहर	67	40	0
4	मूँग	272	50	210
5	धान	79	34	0
6	मसूर	54	34	0

द्वितीयक एवं सूक्ष्म पोषक तत्वों संबंधी सिफारिशें				
क्र.	पैरामीटर	मृदा अनुपात संबंधी सिफारिशें	अनुपात	
1	सल्फर (S)	सल्फर	20 कि.ग्रा./हे.	नहीं
2	जिंक (Zn)	जिंक सल्फेट (21%)	25 कि.ग्रा./हे.	हाँ
3	आयन (Fe)	फेरस सल्फेट (19%)	50 कि.ग्रा./हे.	नहीं
4	मैंगनीज (Mn)	मैंगनीज सल्फेट (50.5%)	10 कि.ग्रा./हे.	नहीं
5	कॉपर (Cu)	कॉपर सल्फेट (24%)	10 कि.ग्रा./हे.	नहीं
6	बोरान (B)	बोरिक (12.5%)	10 कि.ग्रा./हे.	हाँ

सामान्य सिफारिशें				
क्र.	पैरामीटर	मृदा अनुपात संबंधी सिफारिशें	अनुपात	
1	जैविक खाद	कोबर खाद	15 टन/हे.	हाँ
2	जैव उर्वरक	पी.एच.डी. - 3 कि.ग्रा./हे.		हाँ
3	सूक्ष्म पोषक	5 टन प्रति हेक्टेयर (सोयाबीन, मक्का, मूँग, मसूर, अरहर)		हाँ
4	उर्वरक	5 टन प्रति हेक्टेयर (मूँग, मसूर, अरहर)		हाँ
5	पूजा/निष्पन्न	150-200 कि.ग्रा./हे. निष्पन्न		हाँ

स्वस्थ धरा
केत हरा

सहायक मिट्टी परीक्षण अधिकारी
भोपाल, जिला भोपाल

5012- पी. एच. एवं ए. एस. ए. डी. मिट्टी परीक्षण प्रयोगशाला, भोपाल

1. मृदा में पोषक तत्वों का उपयुक्त स्तर नहीं होने की स्थिति में अनुशसित मात्रा के अनुसार दशरी गोबर खाद या आधी मात्रा में कैल्शियम खाद के साथ उर्वरकों की उपलब्धता के अनुसार विकल्प एक या विकल्प दो का प्रयोग करें।
2. जहाँ सूक्ष्म तत्वों का स्तर उपयुक्त स्तर से कम है वहाँ अनुशसित मात्रा अनुसार सूक्ष्म तत्वों वाले उर्वरकों को अंतिम वृत्तवर्षी के पूर्व खेत में मिला दें या खड़ी फसल में छिड़काव करें।
3. अनाज वाली फसलों में नाइट्रोजन वाले उर्वरकों की आधी मात्रा फासफोरस व पोटाश की पूरी मात्रा बुवाई के समय सीड बग फर्टीलाइजर ड्रिल का प्रयोग करते हुए करें तथा नाइट्रोजन की शेष मात्रा को 2 या 3 बराबर भागों में बाँट कर प्रथम सिंचाई के समय एवं 20-25 दिन के अंतराल में उपयोग करें। दलहनी एवं तिलहनी फसलों में अनुशसित उर्वरकों की पूरी मात्रा बुवाई के समय करें।
4. दलहनी फसलों में राइजोबियम एवं अनाज वाली फसलों में एजोटोबैक्टेरिया गन्ना में एजोस्प्रिलम तथा सभी फसलों में पी.एस.बी. कल्चर से बीज या मृदा उपचार फसलों की उपज एवं मृदा स्वास्थ्य हेतु लाभकारी होता है।
5. हरी खाद सन/डेंचा की बुवाई कर 30-35 दिनों बाद पलट देने से मृदा में जैविक कलन बढ़ने से मृदा स्वास्थ्य में सुधार होता है। तथा 80 से 100 कि.ग्रा. प्रति हैक्टर वायुमण्डलीय नाइट्रोजन का भूमि में रथाईकरण होता है।
6. स्वस्थ मृदा से ही अधिक उपज प्राप्त की जा सकती है, बीमार मृदा से नहीं। मृदा को स्वास्थ्य बनाने के लिए कैल्शियम खाद उपलब्धता अनुसार 5 से 7 टन प्रति हैक्टर या गोबर खाद 10 से 12 टन प्रति हैक्टर का प्रयोग करें।
7. मृदा को स्वस्थ बनाये रखने हेतु खरपतवारों, कीटों एवं रोगों के नियन्त्रण हेतु अतिरिक्त विकल्प के रूप में ही खरपतवारनाशक, कीटनाशक एवं फफूंदीनाशक दवा का प्रयोग करें। इसके पूर्व जैविक/समन्वित प्रबंधन से खरपतवार/कीट/रोग का नियन्त्रण हेतु उपाय करें। फसल अवशेषों को खेतों में न जलाये, अन्यथा मृदा में उपस्थित लाभदायक जीवाणु के नष्ट होने से फसलों हेतु पोषक तत्वों की उपलब्धता प्रभावित होने से उपज कम होगी।
8. मृदा में ज्यादा क्षारीयता होने पर क्षारीयता को दूर करने के लिए जिप्सम की सिफारिश मात्रानुसार अंतिम वृत्तवर्षी के समय खेत में मिलावे।
9. मृदा परीक्षण हेतु अपने खेत से 10-12 स्थान प्रति हैक्टेयर से मृदा नमूना लेकर एकत्र कर कृषक मित्र अथवा क्षेत्रीय ग्रामीण कृषि विस्तार अधिकारी को उपलब्ध करावे।
10. कृषक भाई नमूने का परिणाम क्षेत्रीय ग्रामीण कृषि विस्तार अधिकारी से या स्वयं प्रयोगशाला से प्राप्त कर सकते हैं।

कृषक मित्र, परीक्षण प्रयोगशाला, भोपाल
मिशन-अभिलेख



किसान कल्याण तथा कृषि विकास
विभाग, मध्यप्रदेश शासन



मृदा स्वास्थ्य

कार्ड

स्वस्थ धरा-खेत हरा

किसान का नाम

सुधीर कुमार 02

मृदा स्वास्थ्य कार्ड संख्या

31 / 2022 - 23

मिडिली परीक्षण प्रयोगशाला, भोपाल

कृषि एवं सहकारिता विभाग
कृषि एवं किसान कल्याण
मंत्रालय, भारत सरकार



किसान कल्याण तथा
कृषि विकास विभाग
मध्यप्रदेश

प्रयोगशाला का नाम - मिथी परीक्षण प्रयोगशाला, भोपाल

वर्ष - 2022-23
किसाल एवं गृहा नमूना विवरण
31
सेफल कमांक 02
फिड नं. 0
Not Available
Not Available
मौ. रसायनशास्त्र मुखर्जी कॉलेज भोपाल
GEN
कोलार
Not Available
Not Available
सिखित

क्र.	परीक्षण	ईकाई	आपतमान	मानक स्तर
1	घी. पर. (PM)	7.50	सामान्य	अन्तर्लीय 6.5 से कम सामान्य 6.5 से 8.5 तक कारिय 8.5 से अधिक
2	ई.सी. (EC)	0.62	मि. मो. / से.मी.	सामान्य 1 से कम मध्यम 1 से 3 तक होलिकारक 3 से अधिक
3	ऑक्जिजन (OC)	0.45	प्रतिभार	निम्न 0.5 से कम मध्यम 0.5 से 0.75 तक उच्च 0.75 से अधिक
4	उपलब्ध नाइट्रोजन (N)	191.00	कि.ग्र./हे.	निम्न 280 से कम मध्यम 280 से 560 तक उच्च 560 से अधिक
5	उपलब्ध फास्फोरस (P)	9.00	कि.ग्र./हे.	निम्न 10 से कम मध्यम 10 से 25 तक उच्च 25 से अधिक
6	उपलब्ध पोटेसियम (K)	275.00	कि.ग्र./हे.	निम्न 120 से कम मध्यम 120 से 280 तक उच्च 280 से अधिक
7	उपलब्ध सल्फर (S)	14.00	घी.पी.एम.	कम 10 से कम परीक्षा 10 से अधिक
8	उपलब्ध जिंक (Zn)	0.37	घी.पी.एम.	कम 0.6 से कम परीक्षा 0.6 से अधिक
9	उपलब्ध आयरन (Fe)	5.37	घी.पी.एम.	कम 4.5 से कम परीक्षा 4.5 से अधिक
10	उपलब्ध मैंगनीज (Mn)	2.70	घी.पी.एम.	कम 2 से कम परीक्षा 2 से अधिक
11	उपलब्ध कॉपर (Cu)	0.93	घी.पी.एम.	कम 0.2 से कम परीक्षा 0.2 से अधिक
12	उपलब्ध बोरान (B)	1.84	घी.पी.एम.	कम 0.5 से कम परीक्षा 0.5 से अधिक

सन्दर्भ उपलब्ध के लिये उर्वरक सिफारिश (ऑक्जिजन खत के साथ)

क्र.	उपलब्ध	उर्वरक संकेतन - 1		उर्वरक संकेतन - 2	
		गुणवत्ता	सिफारिश	गुणवत्ता	सिफारिश
1	सोपान	54	625	34	0
2	सोपान	272	391	50	210
3	सोपान	67	391	40	0
4	सोपान	272	391	50	210
5	सोपान	79	100	34	0
6	सोपान	54	391	34	0

दिवलीयक एवं सूक्ष्म पोषक तत्वों संबंधी सिफारिश

क्र.	परीक्षण	गुणवत्ता	सिफारिश	अनुपेक्षा
1	सोपान (S)	सोपान	20 कि.ग्र./हे.	नहीं
2	सोपान (Zn)	सोपान	25 कि.ग्र./हे.	नहीं
3	सोपान (Fe)	सोपान	50 कि.ग्र./हे.	नहीं
4	सोपान (Mn)	सोपान	10 कि.ग्र./हे.	नहीं
5	सोपान (Cu)	सोपान	10 कि.ग्र./हे.	नहीं
6	सोपान (B)	सोपान	10 कि.ग्र./हे.	नहीं

सामान्य सिफारिश

क्र.	परीक्षण	गुणवत्ता	सिफारिश	अनुपेक्षा
1	सोपान	सोपान	15 कि.ग्र./हे.	नहीं
2	सोपान	सोपान	15 कि.ग्र./हे.	नहीं
3	सोपान	सोपान	15 कि.ग्र./हे.	नहीं
4	सोपान	सोपान	15 कि.ग्र./हे.	नहीं
5	सोपान	सोपान	15 कि.ग्र./हे.	नहीं

स्वरूप धारा
कोलार

सहायक मिथी परीक्षण अधिकारी
भोपाल, जिला भोपाल

(सोपान)

Soil - पी.एस.ए. 3-5-4-1 मिथी सामान्य ही है (उपलब्ध) 3-5-4-1

मृदा उर्वरता मानचित्र जिला-भोपाल (म0प्र0)
वर्ष 2017-18 एवं 2018-19 (द्वितीय चक्र)



मुख्य
पोषक
तत्व

तत्वों का मानक स्तर
(Ramamoorthy et. al. 1989)

निम्न	1.71 से कम
मध्यम	1.71 से 2.33 तक
उच्च	2.33 से अधिक

तत्व सूचकांक / पोषक तत्वों का स्तर

विकास खण्ड	आर्गेनिक कार्बन	नाइट्रोजन	फास्फोरस	पोटेशियम
फन्दा	1.60	1.44	1.95	2.54
बैरसिया	1.85	1.38	2.05	2.49
योग	1.63	1.41	2.00	2.51

संकेत				
स्तर	आर्गेनिक कार्बन	नाइट्रोजन	फास्फोरस	पोटेशियम
निम्न	●	▲	■	★
मध्यम	●	▲	■	★
उच्च	●	▲	■	★

तत्व सूचकांक (NI) सूत्र

$$\frac{(L*1)+(M*2)+(L*3)}{L+M+H}$$

मृदा उर्वरता मानचित्र जिला-भोपाल (म0प्र0)
वर्ष 2017-18 एवं 2018-19 (द्वितीय चक्र)



सुक्ष्म
पोषक
तत्व

संकेत		
स्तर तत्व	अपर्याप्त	पर्याप्त
सल्फर	●	●
जिंक	▲	▲
आयरन	■	■
कापर	★	★
मैग्नीज	●	●
बोरान	●	●

तत्वों का मानक स्तर (पीपीएम में)		
तत्व	अपर्याप्त	पर्याप्त
सल्फर	10 से कम	10 से अधिक
जिंक	0.6 से कम	0.6 से अधिक
आयरन	4.5 से कम	4.5 से अधिक
कापर	0.2 से कम	0.2 से अधिक
मैग्नीज	2.0 से कम	2.0 से अधिक
बोरान	0.5 से कम	0.5 से अधिक

सुक्ष्म पोषक तत्वों का स्तर (पीपीएम/अपर्याप्त/पर्याप्त में)													
क्रि. संख्या	ग्राम पंचायत	सल्फर		जिंक		आयरन		कापर		मैग्नीज		बोरान	
		अपर्याप्त	पर्याप्त	अपर्याप्त	पर्याप्त	अपर्याप्त	पर्याप्त	अपर्याप्त	पर्याप्त	अपर्याप्त	पर्याप्त	अपर्याप्त	पर्याप्त
फरदा	16286	90	10	80	20	81	19	99	1	100	0	98	2
बैरसिया	16287	91	9	81	19	84	16	99	1	99	1	97	3
योग	32673	91	9	81	19	82	18	99	1	99	1	97	3

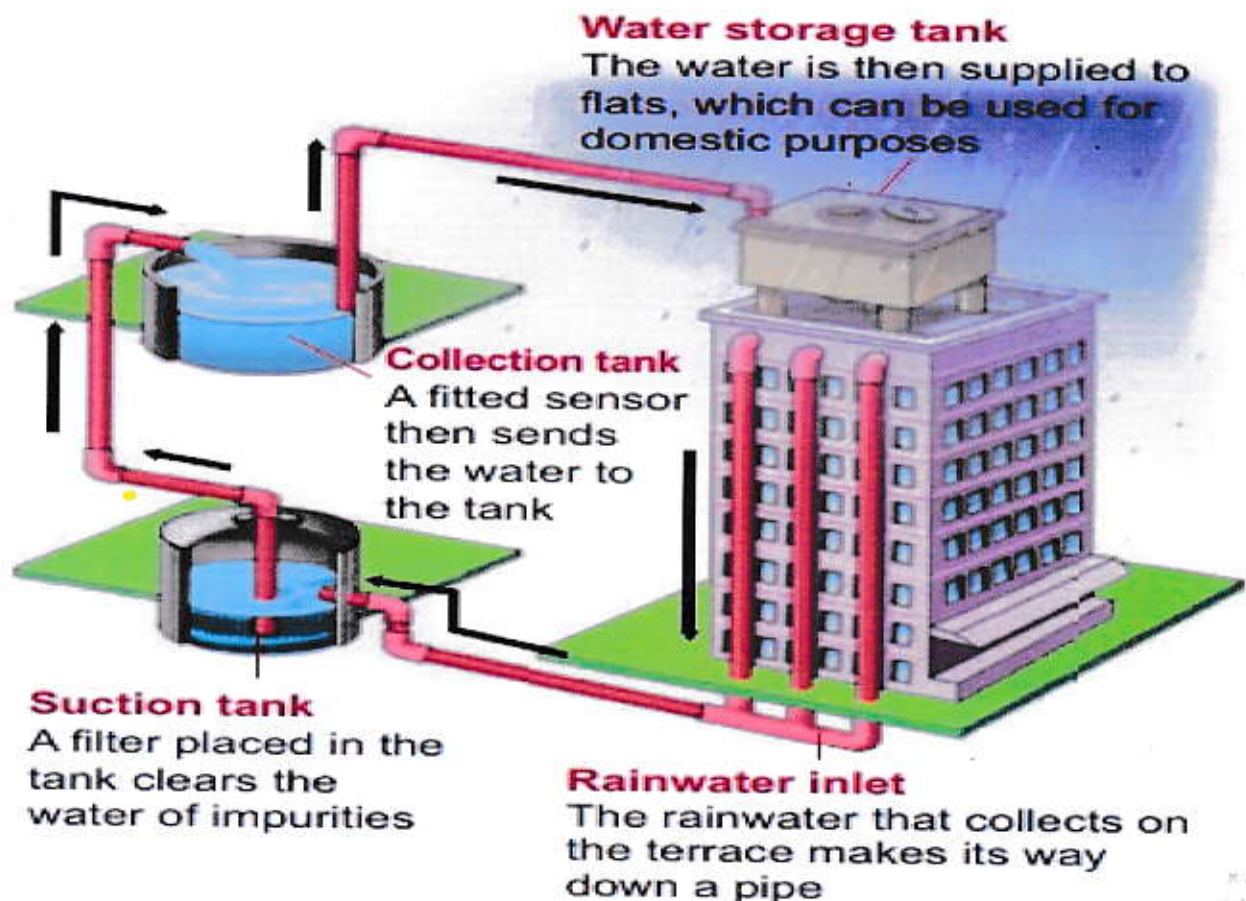
पायलेट आधार पर चयनित ग्रामों में मृदा नमूना एकत्रीकरण, नमूना विश्लेषण,
स्वाइल हैल्थ कार्ड वितरण लक्ष्य पूर्ति वित्तीय वर्ष 2019-20

संभाग भोपाल

जिला	मृदा नमूना एकत्रीकरण			मृदा नमूना विश्लेषण			स्वाइल हैल्थ कार्ड वितरण		
	लक्ष्य	पूर्ति	प्रतिशत	लक्ष्य	पूर्ति	प्रतिशत	लक्ष्य	पूर्ति	प्रतिशत
भोपाल	266	212	79	266	212	79	266	212	79
योग	266	212	79	266	212	79	266	212	79

9- Rain Water Harvesting

Rain water harvesting in a proper way can be permanent solution of the problem of water crisis. The Govt. Dr. S.P.M Science & Commerce College Bhopal is one of the old and famous colleges of the city. It is spread over 1.20 acres of land and the strength of the students is more than 3000. The college has a plan to do rain water harvesting in the new building which is under construction. Through rain water harvesting locally available rainwater is used to meet water requirements throughout the year without the need of huge capital expenditure. It would facilitate the availability of uncontaminated water for domestic and other needs.



10- Carbon Foot Print Analysis

Carbon Foot Print Analysis has also been included under Green Audit as one of the Factors. For this the number of the teaching staff, non-teaching staff and the students coming to the college during normal days and examination days has also been included. Various tables have already been prepared for the above category covering various points.

EXAMINATION DAYS (Table – A)

S.N.	EXAMINATIONS SHIFT	TOTAL NO OF STUDENTS	NO OF PRESENT STUDENTS	NO OF ABSENT STUDENTS	VEHICLE USED BY STUDENTS	NO OF STUDENTS USED PUBLIC TRANSPORT	TWO WHEELERS	BICYCLES
1	MORNING	235	235	0	198	26	169	3
2	NOON	266	265	1	227	158	66	3
3	EVENING	148	148	0	136	190	43	3
	AVERAGE	217	216	0.33	187	123	93	3
1	MORNING	332	325	7	292	41	241	10
2	NOON	247	247	1	202	117	81	4
3	EVENING	186	186	0	148	94	52	2
	AVERAGE	255	253	2.66	214	84	125	5
1	MORNING	355	353	2	331	52	268	11
2	NOON	358	255	3	217	108	107	2
3	EVENING	133	133	0	112	58	52	2
	AVERAGE	282	247	1.66	220	73	142	5
1	MORNING	71	71	0	58	12	45	1
2	NOON	324	322	2	301	152	146	3
3	EVENING	255	255	0	217	112	97	8
	AVERAGE	217	216	0.66	192	92	96	4
1	MORNING	397	397	0	353	36	312	5
2	NOON	247	247	0	221	112	106	3
3	EVENING	204	202	2	187	102	81	4
	AVERAGE	283	282	0.66	254	83	166	4
1	MORNING	144	141	1	120	19	92	9
2	NOON	247	247	0	207	102	103	2
3	EVENING	166	166	0	123	76	42	5
	AVERAGE	186	185	0.33	150	66	79	5.33
1	MORNING	117	117	0	98	13	72	13
2	NOON	255	254	1	221	123	96	2
3	EVENING	110	107	3	87	42	43	2
	AVERAGE	161	160	1.33	136	60	70-71	5.66

- 1- TOTAL NO. OF STUDENTS = 228-229
- 2- NO OF STUDENTS PRESENT = 222-223
- 3- NO OF STUDENTS ABSENT = 1.09-02
- 4- VEHICLE USED = 193-194
- 5- PUBLIC TRANSPORT USED = 83
- 6- TWO WHEELERS USED = 110.14
- 7- BICYCLES USED = 4.56

20 PUBLIC TRANSPORT = 720 Litres IN 7 DAYS
80 TWO WHEELERS BIKES = 420 Litres IN 7 DAYS

Foot Print Analysis has been done on the basis of the number of students present on 06 normal days of the college

ROUTINE / NORMAL DAYS (Table B)

S. N.	DAY	SCIENCE STUDENT PRESENT	COMMERCE STUDENT PRESENT	ARTS STUDENT PRESENT	TOTAL STUDENT PRESENT	VEHICLE USED BY STUDENT	NO OF STUDENTS USED PUBLIC TRANSPORT	TWO WHEELERS	BICYCLES
1	MONDAY	39	40	50	129	112	72	38	2
2	TUESDAY	28	37	49	114	103	68	34	1
3	WEDNESDAY	24	31	39	94	79	48	30	1
4	THURSDAY	25	34	38	97	80	50	28	2
5	FRIDAY	29	31	43	103	88	52	35	1
6	SATURDAY	40	32	48	120	102	64	36	2
	AVERAGE	30.833	34.1666	44.5	109.5	94	59	33.5	1.5

1- SCIENCE STUDENTS AVERAGE = 30.833

2- COMMERCE STUDENTS AVERAGE = 34.166

3- ARTS STUDENTS AVERAGE =44.5

4- TOTAL STUDENT S AVERAGE = 109.5

5- AVERAGE OF VEHICLE USED = 94

6- PUBLIC TRANSPORT USED AVERAGE = 59

7- TWO WHEELERS USED AVERAGE = 33.5

8- BICYCLES USED AVERAGE = 1.5

15 PUBLIC TRANSPORT = 270 litres in 07 days

25 TWO WHEELERS = 112-113 litres in 07 days

Foot print Analysis has been done on the basis of the number of teachers present on the normal days of the college.

TEACHING STAFF (Table – C)

S.N	DAY	TOTAL PROFESSOR	NO OF PROFESSOR PRESENT	NO OF PROFESSOR ABSENT	VEHICLES USED BY PROFESSORS	NO OF CARS USED	NO OF BIKES USED	NO OF CYCLES USED
1	MONDAY	53	43	10	39	36	3	0
2	TUESDAY	53	44	9	40	36	4	0
3	WEDNESDAY	53	41	12	37	34	3	0
4	THURSDAY	53	41	12	37	34	3	0
5	FRIDAY	53	44	9	40	35	5	0
6	SATURDAY	53	42	11	38	35	3	0
	AVERAGE	53	42.5	10.5	38.5	35	4	0

1- TOTAL AVERAGE FUEL CONSUPTION BY BIKES = 18 LITER IN 6 WORKING DAYS

2- TOTAL AVERAGE FUEL CONSUPTION BY FOUR WHEELERS CARS = 421 LITER IN 6 WORKING DAYS

Foot Print Analysis has been done on the basis of the number of non-teaching staff present on the normal days of the college.

NON-TEACHING STAFF (Table – D)

S.N.	DAY	NO. OF NON-TEACHING STAFF	NO. OF NON-TEACHING STAFF PRESENT	NO. OF NON-TEACHING STAFF ABSENT	VEHICLE USED BY NON-TEACHING STAFF	NO OF CARS USED	NO OF BIKES USED	NO OF BICYCLES USED
1	MONDAY	18	16	2	16	0	14	2
2	TUESDAY	18	17	1	16	0	14	2
3	WEDNESDAY	18	16	2	15	0	12	2
4	THURSDAY	18	16	2	15	0	11	2
5	FRIDAY	18	17	1	16	0	11	2
6	SATURDAY	18	16	2	16	0	12	1
	AVERAGE	18	16.33	1.66	15.66	0	12.33	1.833

1- TOTAL AVERAGE FUEL CONSUPTION BY BIKES = 55.485 LITERS IN 6 WORKING DAYS

Foot Print Analysis has been done on the basis of the number of non-teaching staff present on 06 examination days.

Conclusion

It has been observed from Table (A) that out of (total no of students) 228-229 students, 222 to 223 students are present daily whose two wheelers consume 420 to 422 litres fuel/week. The students who use public transport are around 83-84 in number. An average of 720 litres fuel/week is consumed by their public transport. From the observation table (B), it is concluded that the number of students present in the college on normal days is around 109 to 110. The fuel consumed by their vehicles is 112 to 113 litres / week. The students who use public transport are around 59-60 in number on which average of 270 to 271 litres fuel/week is consumed. Observing table (C) it is concluded that the total number of teachers is 53 out of them 8 to 10 professors remain engage in other duties outside the college. 42 to 43 teachers are present everyday by whom vehicles are used personally. Some teachers pool their vehicles. The fuel consumed is 421 litres / week by their four-wheelers. Apart from this some teachers also make use of two wheelers and the fuel consumed by their vehicles is 18 litres / week. The teachers who use their four wheelers independently are 37 in number and the fuel consumed by their four wheelers is 421 litres / week in 06 working days.

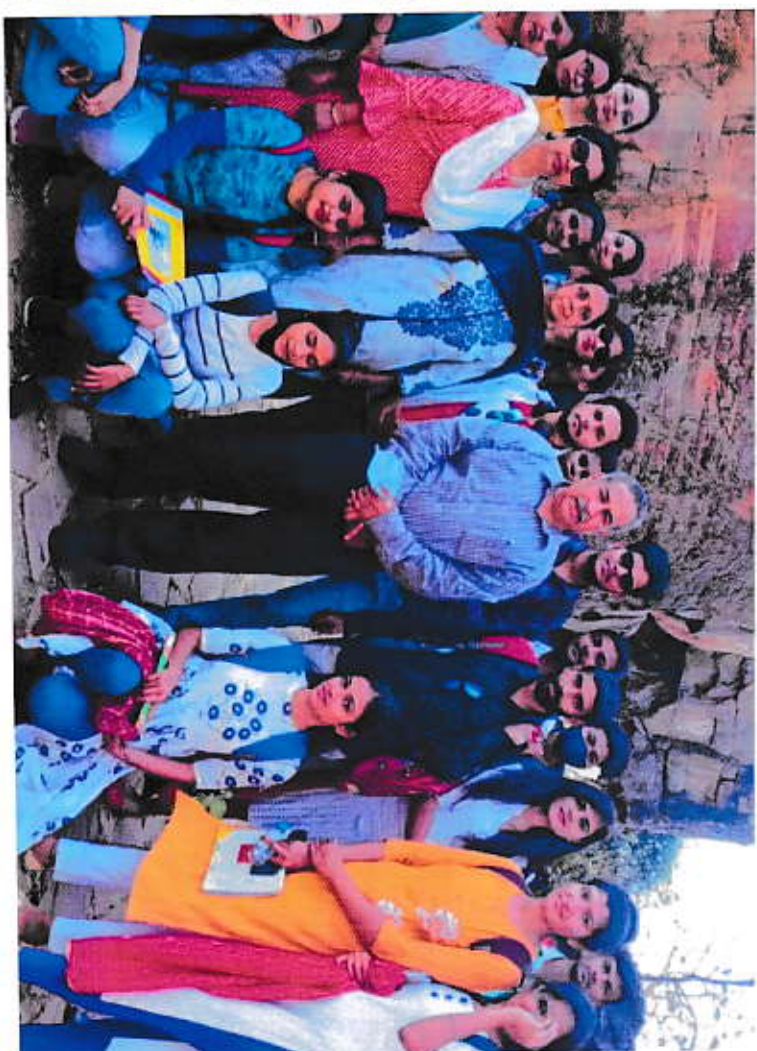
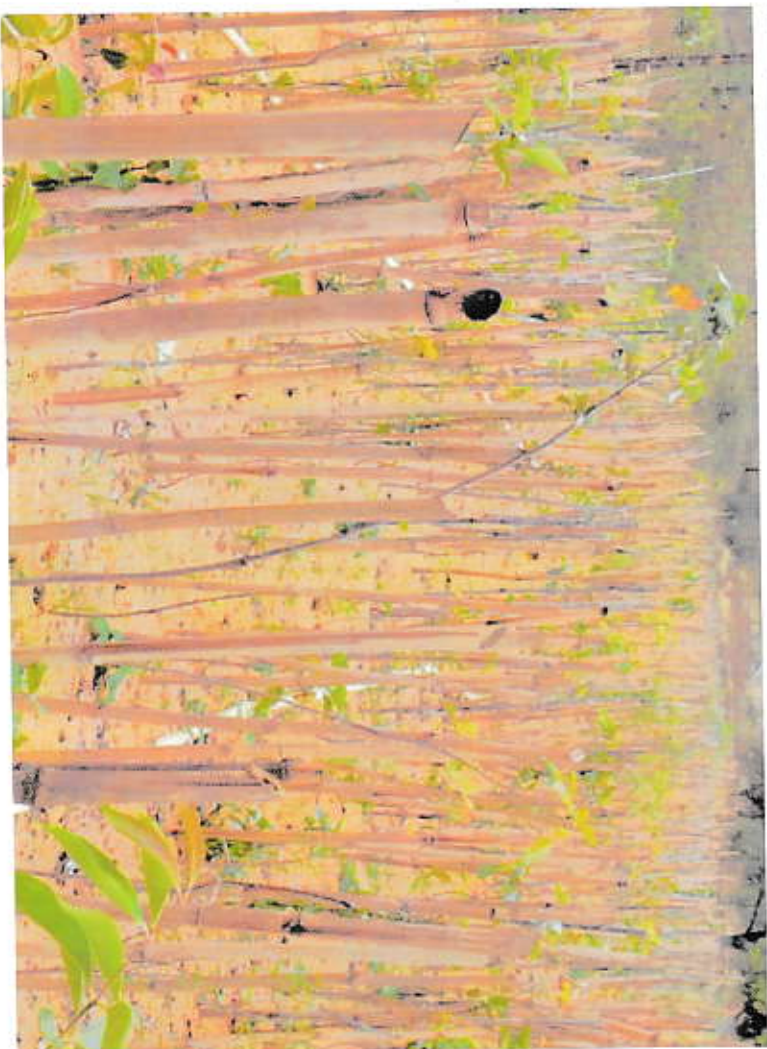
Observing table (D) it is concluded that the fuel consumed by the two wheelers of the non-teaching staff members, whose number is 18 in total, is 55-56 litres / week.











11- Suggestions and Recommendation

Today the need of the hour is to contribute our efforts to the organic green revolution. In order to achieve, this we need to start eco-friendly practices. So joint initiatives from the students, the faculty and the staff are to be taken. Some of the measures to make the campus cleaner and greener are as follows:-

- Decreasing paper waste.
- Polythene free campus.
- Segregation of biodegradable and non-Biodegradable waste.
- Roof water harvesting to be done for water conservation.
- Solar Panels to be installed as an alternative source of energy and to conserve electricity. The process of installation is under process with the collaboration of Urja Vikas Nigam Govt. of M.P., registration of the college has already been completed and the tender process is going on.
- More trees are to be planted.
- The soil of the campus has been tested and found to be in normal range and suitable for vegetation.
- The soil is found deficient in micronutrients like Zinc (Zn) and Boron (B).
- Organic Manures and fertilizers are to be used as recommended in the report.
- In tube-well water bacterial load is relatively higher than the prescribed range which can be removed effectively by using the Aqua Guard.
