

2023

SHRI LAL BAHADUR SHASTRI
DEGREE COLLEGE GONDA

DEPARTMENT OF CHEMISTRY



A One Day Seminar
Under Intellectual Property Rights
Organized
Department of Chemistry
On
Solid Waste Management
(April 15, 2023)

[SEMINAR REPORT]

A one day seminar under intellectual property rights on solid waste management



SHRI LAL BAHADUR SHASTRI DEGREE COLLEGE, GONDA

श्री लाल बहादुर शास्त्री डिग्री कॉलेज, गोण्डा

AN AFFILIATED COLLEGE OF DR RAMMANOHAR LOHIA AVADH UNIVERSITY, AYODHYA, (U.P)

Department of Chemistry

**One day seminar under intellectual
property rights
(15 April 2023)**

On

Solid Waste Management

ORGANIZED BY

DEPARTMENT OF CHEMISTRY, SLBSDC, GONDA

Inaugural Lecture





By

**Prof. S. C. Mishra
(10.00 am to 11.00 am)**

High Tea

(11.00 am to 11.30 am)

Keynote Speakers

Lecture 1 (11.30 am to 12.45 pm)	Lecture 2 (12.45 pm to 1.30 pm)	Lunch Break (1.30 pm To 02.00 pm)	Lecture 3 (2.00 pm to 02.45 pm)	Lecture 4 (2.45 pm to 03.30pm)
				
Dr. R. R. Pandey Dept. of Chemistry MLK PG College Balrampur	Dr. S. K. Gautam Dept. of Chemistry MGPG College Gorakhpur		Dr. Vikas Singh HOD Chemistry NPGC Lucknow	Dr. Puneet Kumar Dept. of Chemistry SLBSDC Gonda

Venue:

Smt. Lalita Shastri Sabhagar, Shri Lal Bahadur Shastri Degree College, Gonda

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President Prof. R. K. Pandey Principal	Convener Dr. Pushyamitra Mishra Head, Department of Chemistry
Organizing Secretary Dr. Ravi Prakash Ojha Assistant Professor, Department of Chemistry	Organizing Secretary Dr. Puneet Kumar Assistant Professor, Department of Chemistry

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Mr. Jitendra Kumar	Mr. Shudhir Tiwari	Mr. N. K. Shukla

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The objectives of this seminar were to study the current practices related to the various solid waste management initiatives taken in India for human wellbeing. The other purpose is to provide some suggestions and recommendations to improve the waste management practices in Indian towns. This report is based on secondary research as per the suggestions given by speakers. Existing reports related to waste management and recommendations of planners/NGOs/consultants/government accountability agencies/key industry experts/ for improving the system were discussed. It offers deep knowledge about the various waste management initiatives in India and find out the scope for improvement in the management of waste for the welfare of the society. The seminar attempts to understand the important role students, staff and teachers in HEIs along with the role played by the formal sector engaged in waste management in our country. This work is original and could be further extended.

Introduction "There are few things certain in life – one is death, second is change and the other is waste." No one can stop these things to take place in our lives. But with better management we can prepare ourselves. Here we will talk about waste and waste management. Each of us has a right to clean air, water and food. This right can be fulfilled by maintaining a clear and healthy environment. Now for the first question, what is waste? Any material which is not needed by the owner, producer or processor is waste. Generally, waste is defined as at the end of the product life cycle and is disposed of in landfills. Most businesses define waste as "anything that does not create value". In a common man's eye anything that is unwanted or not useful is garbage or waste. However scientifically speaking there is no waste as such in the world. **Almost all the components of solid waste have some potential if it is converted or treated in a scientific manner.** Hence we can define solid waste as "*Organic or inorganic waste materials produced out of household or commercial activities, that have lost their value in the eyes of the first owner but which may be of great value to somebody else.*" (Robinson, W.D.1986). Generation of waste is inevitable in every habitation howsoever big or small. Since the dawn of civilization humanity has gradually deviated from nature & today there has been a drastic change in the lifestyle of human society. Direct reflection of this change is found in the nature & quantity of garbage that a community generates. We can dispose the waste or reuse the waste and can earn money through proper management. Indian cities which are fast competing with global economies in their drive for fast economic development have so far failed to effectively manage the huge quantity of

waste generated. The projected urban population percentage is 33.4 percent by the year 2026. The quantum of waste generated in Indian towns and cities is increasing day by-day on account of its increasing population and increased GDP. The annual quantity of solid waste generated in Indian cities has increased from six million tons in 1947 to 48 million tons in 1997 with an annual growth rate of 4.25 percent, and it is expected to increase to 300 million tons by 2,047 (CPCB, 1998). Population explosion, coupled with improved life style of people, results in increased generation of solid wastes in urban as well as rural areas of the country. In India like all other sectors there is a marked distinction between the solid waste from urban & rural areas. However, due to ever increasing urbanization, fast adoption of 'use & throw concept' & equally fast communication between urban & rural areas the gap between the two is diminishing. The solid waste from rural areas is more of a biodegradable nature & the same from urban areas contains more non-biodegradable components like plastics & packaging. The repugnant attitude towards solid waste & its management is however, common in both the sectors. Universally 'making garbage out of sight' is the commonly followed practice. In India, the urban local bodies, popularly known as the municipal corporations/councils, are responsible for management of activities related to public health. However, with increasing public and political awareness as well as new possibilities opened by economic growth, solid waste management is starting to receive due attention. The various initiatives taken by government, NGOs, private companies, and local public drastically increased in the past few decades. Nonetheless, land filling is still the dominant solid waste management option for the United States as well as many other countries like India around the world. It is well known that waste management policies, as they exist now, are not sustainable in the long term. Thus, waste management is undergoing drastic change to offer more options that are more sustainable. We look at these options in the hope of offering the waste management industry a more economically viable and socially acceptable solution to our current waste management dilemma. This paper outlines various advances in the area of waste management. It focuses on current practices related to waste management initiatives taken by India. It also highlights some initiatives taken by the US federal government, states and industry groups. The purpose of this paper is to gain knowledge about various initiatives in both countries and locate the scope for improvement in the management of waste.

Classification of waste

There may be different types of waste such as Domestic waste, Factory waste, Waste from oil factory, E-waste, Construction waste, Agricultural waste, Food processing waste, Bio-medical waste, Nuclear waste, Slaughter house waste etc.

We can classify waste as follows:

- Solid waste- vegetable waste, kitchen waste, household waste etc.
- E-waste- discarded electronic devices such as computer, TV, music systems etc.
- Liquid waste- water used for different industries, tanneries, distilleries, thermal power plants
- Plastic waste- plastic bags, bottles, bucket, etc.
- Metal waste- unused metal sheet, metal scraps etc.

• Nuclear waste- unused materials from nuclear power plants Further we can group all these types of waste into wet waste (Biodegradable) and dry waste (Non Biodegradable). Wet waste (Biodegradable) includes the following:

• Kitchen waste including food waste of all kinds, cooked and uncooked, including eggshells and bones

• Flower and fruit waste including juice peels and house-plant waste

• Garden sweeping or yard waste consisting of green/dry leaves

• Sanitary wastes • Green waste from vegetable & fruit vendors/shops

• Waste from food & tea stalls/shops etc.

Dry waste (Non-biodegradable) includes the following:

• Paper and plastic, all kinds

• Cardboard and cartons

• Containers of all kinds excluding those containing hazardous material

• Packaging of all kinds

• Glass of all kinds

• Metals of all kinds

• Rags, rubber

• House sweeping (dust etc.)

• Ashes

• Foils, wrappings, pouches, sachets and tetra packs (rinsed)

• Discarded electronic items from offices, colonies viz. cassettes, computer diskettes, printer cartridges and electronic parts.

• Discarded clothing, furniture and equipment.

In addition to the above wastes, another type of waste called "**Domestic Hazardous Waste**" may also be generated at the household level. These include used aerosol cans, batteries, and household kitchen and drain cleaning agents, car batteries and car care products, cosmetic items, chemical-based insecticides/pesticides, light bulbs, tube-lights and compact fluorescent lamps (CFL), paint, oil, lubricant and their empty containers. Waste that is considered hazardous is first required by the EPA to meet the legal definition of solid waste. The EPA incorporates hazardous waste into three categories. The first category are source-specific wastes, the second category is nonspecific wastes, and third, commercial chemical products. Generally, hazardous waste "is waste that is dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludge. They can be discarded commercial products, like cleaning fluids or pesticides, or the by-products of manufacturing processes (EPA Wastes Website, 2010). Similarly there is "Non Hazardous waste". There are many definitions of hazardous and non-hazardous waste within the US federal government, states and industry groups.

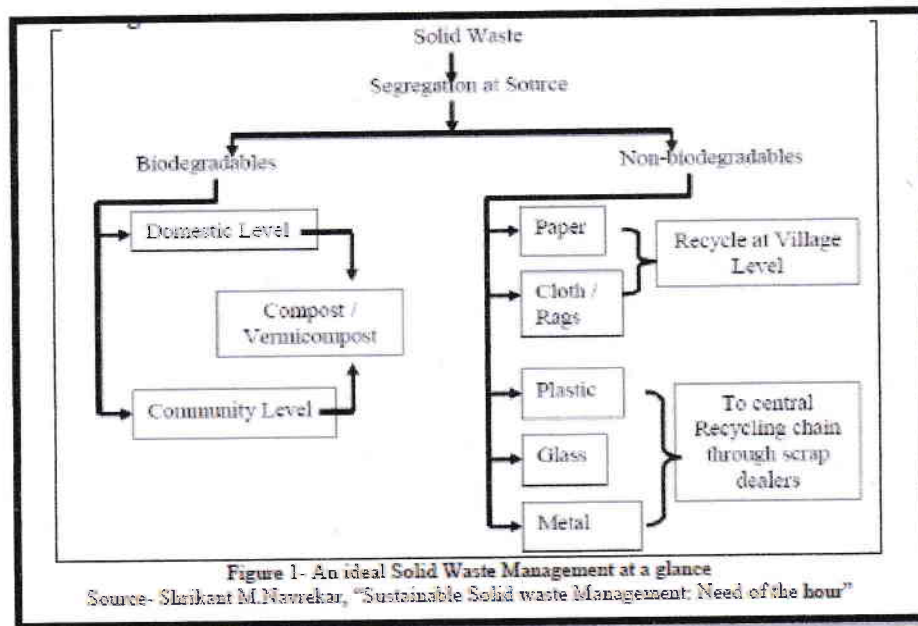
Disposal vs. Management

There are common practices to dispose waste from ordinary people. But disposal of waste is becoming a serious and vexing problem for any human habitation all over the world. Disposing solid waste out of sight does not solve the problem but indirectly increases the same manifold and at a certain point it goes beyond the control of everybody. The consequences of this practice such as health hazards, pollution of soil, water, air & food, unpleasant surroundings, loss of precious resources that could be obtained from the solid waste, etc. are well known. That's why it is essential to focus on proper management of waste all over the world. Waste management has become a subject of concern globally and nationally. The More advanced the human settlements, the more complex the waste management. There is a continuous search for sound solutions for this problem but it is increasingly realized that solutions based on technological advances without human intervention cannot sustain for long and it in turn results in complicating the matters further. Management of solid waste which generally involves proper segregation and scientific recycling of all the components is in fact the ideal way of dealing with solid waste. Solid waste management (SWM) is a commonly used name and defined as the application of techniques to ensure an orderly execution of the various functions of collection, transport, processing, treatment and disposal of solid waste (Robinson, 1986). It has developed from its early beginnings of mere dumping to a sophisticated range of options including re-use, recycling, incineration with energy recovery, advanced landfill design and engineering and a range of alternative technologies. It aims at an overall waste management system which is the best environmentally, economically sustainable for a particular region and socially acceptable (World Resource Foundation, 1996; McDougall et al., 2001). This not only avoids the above referred consequences but it gives economic or monetary returns in some or the other forms.

Basic principles of Solid Waste Management

- 1) 4Rs: Refuse, Reduce, Reuse & Recycle
 - Refuse: Do not buy anything which we do not really need.
 - Reduce - Reduce the amount of garbage generated. Alter our lifestyle so that minimum garbage is generated.
 - Reuse - Reuse everything to its maximum after properly cleaning it. Make secondary use of different articles.
 - Recycle – Keep things which can be recycled to be given to rag pickers or waste pickers (Kabadiwallahs). Convert the recyclable garbage into manures or other useful products.
- 2) Segregation at source: Store organic or biodegradable and inorganic or non biodegradable solid waste in different bins. Recycle of all the components with minimum labor and cost.
- 3) Different treatments for different types of solid wastes: One must apply the techniques which are suitable to the given type of garbage. For example the technique suitable for general market waste may not be suitable for slaughter house waste.
- 4) Treatment at nearest possible point: The solid waste should be treated in as decentralized manner as possible. The garbage generated should be treated preferably at the site of

generation i.e. every house. Based on the above principles, an ideal Solid Waste Management for a village could be as under.



Waste Management System in India

Waste management market comprises of four segments – Municipal Waste, Industrial Waste, Bio- Medical Waste and Electronic Waste Market. All these four types of waste are governed by different laws and policies as is the nature of the waste. In India waste management practice depend upon actual waste generation, primary storage, primary collection, secondary collection and transportation, recycling activity, Treatment and disposal.

Waste Collection in India:

Primarily by the city municipality

- No gradation of waste product eg bio-degradable, glasses, poly bags, paper shreds etc.
- Dumps these wastes to the city outskirts Local raddiwala / kabadiwala (Rag pickers)
- Collecting small iron pieces by magnets
- Collecting glass bottles
- Collecting paper for recycling

Waste Management Initiatives in India

During the recent past, the management of solid waste has received considerable attention from the Central and State Governments and local (municipal) authorities in India. A number of partnerships/alliances are found to exist in the field of solid waste management in Indian cities. These alliances are public-private, community-public and private-private arrangements.

Legal Framework	<ul style="list-style-type: none"> • 74th Constitutional Amendment Act, 1992 • Management and Handling Rules • Environment (Protection) Act, 1986 • National Environment Tribunal Act, 1995 • National Environment Appellate Authority Act, 1997 • Water (Prevention & Control of Pollution) Act, 1974 • Water (Prevention & Control of Pollution) Cess Act, 1977
Policy Initiatives	<ul style="list-style-type: none"> • National Urban Sanitation Policy, 2008 • National Environment Policy, 2006 • Policy Statement for Abatement of Pollution, 1992 • National Conservation Strategy and Policy Statement on Environment and Development, 1992 • Law Commission Recommendation • Ecomark Scheme, 1991
Key Government Programmes	<ul style="list-style-type: none"> • JNNURM • Total Sanitation Campaign • MNRE's Waste-to-Energy • Integrated Low Cost Sanitation Scheme • National Biogas and Manure Management Programme • Latest: Swachh Bharat Abhiyan

Challenges in India

Key issues and challenges include lack of collection and segregation at source, scarcity of land, dumping of e-waste, lack of awareness, etc. Simple dumping of mixed waste is the practice followed practically everywhere and especially in the developing countries as they cannot mobilize financial resources for applying expensive technology propounded by the developed countries. In India, "The new Municipal Solid Waste Management Rules 2000", which came into effect from January 2004, fail, even to manage waste in a cyclic process. Waste management still is a linear system of collection and disposal, creating health and environmental hazards. Urban India is likely to face a massive waste disposal problem in the coming years. Until now, the problem of waste has been seen as one of cleaning and disposing as rubbish. But a closer look at the current and future scenario reveals that waste needs to be treated holistically, recognizing its natural resource roots as well as health impacts. Waste can be wealth, which has tremendous potential not only for generating livelihoods for the urban poor but can also enrich the earth

through composting and recycling rather than spreading pollution as has been the case. Increasing urban migration and a high density of population will make waste management a difficult issue to handle in the near future, if a new paradigm for approaching it is not created.

Suggestions for future improvement

The political will is the first priority. Generally Government bodies and municipalities give priority to present problems which they face but do not think for future problems due to environmental decay. Their view is that, they will solve problems when they will face it but not now. Because doing something for environment does not provide political gains or assure next time seat. Now questions is that how can we change this mentality? We believe there should be a positive approach for a long time planning and implementation. Legislation and its effective enforcement is a key to sustainability for which the framework requires to be established. Efforts to improve waste storage and collection are required. This can be done when each household and locality are provided standard bins that are placed outside for ease of collection. In areas where this is not appropriate, centrally located waste collection points should be established that are shared by a number of households. Wastes need to be increasingly sorted at the source, to separate materials that can be recycled and to reduce the amount of wastes requiring collection and disposal. Co-operation is required among communities, the informal sector, the formal waste collectors and the authorities. An effective Solid Waste Management system should aim at minimizing manual handling and 100 % collection & transportation of solid wastes should be achieved.

In solid waste management, one thing became very clear that segregation at source is to be practiced. There are lots of initiatives to manage wastes but goes in vein because of not identifying wealth in wastes. In India, we cannot afford sanitary land filling as land is precious here and there are lot of municipalities who do not have land as trenching ground. The source segregation needs lot of study on human behavior against waste littering. A continuous sensitization programme is to be planned according to the sentiments of the residents towards their city and ultimately it will work as wonders. If waste segregation is practiced, the potential threats can be minimized directly. Besides, the quality of materials retrieved will be better due to absence of mixing. The pickers can thus, fetch better money on the materials retrieved besides having lesser threats of catching diseases, cuts and wounds encountered in the usual practice of waste picking.

The adoption and transfer of the technologies from the developed countries without adapting them to the local or regional perspective would be fallacious on the part of the developing countries. Therefore, the technical aspects for a waste management would have to take into account many points for planning and implementation of strategies according to situation of the country. It would call for the strengthening of the management sector which has to go hand in hand with technical planning. General public can play a very important role. Public participation is necessary for a proper waste management system. Changes in the habits of segregation,

littering, can change the approach towards wastes. For example in a heritage town of West Bengal, there was a movement related to waste management. Within a span of two years it successfully sensitized residents for segregation at source and not littering in open areas. Now the city is really becoming clean and other people are also participating in the movement.

In order to improve the system efficiency and increase the coverage to 100 percent in each city, it is recommended to explore alternative arrangements for collection of waste like involving private operators. A mechanism to generate revenue from the citizens should also be developed. However, the approach to public-private partnerships pursued in the developed countries cannot be replicated for Indian towns in general. This approach can only be implemented after some modifications taking into account the local conditions.

Plastics waste is a significant portion of the total municipal solid waste (MSW). Recycling of plastics should be carried in such a manner to minimize the pollution level during the process and as a result to enhance the efficiency of the process and conserve the energy. Newer techniques related to recycling and reuse of plastic can be adopted.

Conclusion

In order to make proper waste management activity sustain in true sense, following other points need to be given attention to –

1) Region specific planning: Looking at the geographical, topographical and cultural diversity of the country it can be divided into five regions such as Northern region, Eastern region, Western region, Central region and Southern region. Each of these regions has different structure. Hence all the activities should be planned & implemented on regional basis.

2) Planning from below: To make Solid Waste Management a success in true sense, the planning as well as implementation should start from general public level planning followed by block level planning, district level planning and state level planning.

3) Involvement of self help groups, youth groups and small entrepreneurs: The general public level waste management units can be run by self help groups, youth groups or small entrepreneurs. This will help in making the programme self supportive and sustainable.

4) Well planned and effective training policy: Technical training at all levels (General public to state) forms the backbone of a successful waste management programme. Adequate training must be given to all those concerned prior to actual launching of the programme in the field.

Recommendations

1. Keep our self informed: It is important that we are in the know about what is happening on the environment front. Read about how untreated sewage is thrown into the rivers, attend public lectures about air pollution, & keep in touch with new policies that affect our environment. The more informed we are, the better equipped we are to fight such issues.
2. Consume less: Motto: Refuse.....Reduce....Reuse... Recycle .This means consuming fewer resources, reusing whatever we can and finally recycling what cannot be reused. This process greatly reduces the garbage.

3. **Say 'No' to plastic bags:** One of the biggest sources of pollution in Indian cities is the ubiquitous plastic bag. Refuse to accept one. Instead, carry a cloth shopping bag with us.
4. **Separate our garbage:** India has one of the world's most efficient recycling mechanisms. Use the service of our raddiwalla. Newspapers, bottle cans and other such recyclables can fetch us money and in the process we can help to save the environment. Rag pickers, too, perform a vital function for the city. Kitchen garbage (biodegradable) should be separated from non-biodegradable waste.
5. **Compost our organic waste:** Start a vermiculture bin. We can convince our neighbors to start a vermiculture bin also to produce manure.
6. **Stop burning garbage:** Ask our neighbors to desist from burning solid wastes. It may seem harmless but smoke emitted from leaves contributes to air pollution. Also, when there are plastic in the heap, it emits dangerous toxic fumes. Leaves can be converted to fertilizer through composting & plastic can be recycled.



DM
Principal
Gaur Lal Bahadur Shastri Degree College
Gonda

Sr. No.	List of Participant	
1	Nagesh kumar pandey	M.Sc-Botany Year-2
2	RADHA MISHRA	M.Sc-Botany Year-2
3	JYOTI MISHRA	M.Sc-Botany Year-2
4	jjyoti dwivedi	M.Sc-Botany Year-2
5	VAISHNAVI OJHA	M.Sc-Botany Year-2
6	shivani sharma	M.Sc-Botany Year-2
7	pranshi tiwari	M.Sc-Botany Year-2
8	kajal tiwari	M.Sc-Botany Year-2
9	SHIVANI	M.Sc-Botany Year-2
10	HARI OM SARAN	M.Sc-Botany Year-2
11	KARAN TRIPATHI	M.Sc-Botany Year-2
12	ROLLY VERMA	M.Sc-Botany Year-2
13	manshi	M.Sc-Botany Year-2
14	kumkum shukla	M.Sc-Botany Year-2
15	NISBA FATIMA	M.Sc-Botany Year-2
16	MAHIMA KANAUIYA	M.Sc-Botany Year-2
17	POORNIMA PANDEY	M.Sc-Botany Year-2
18	AISHA AFZAL	M.Sc-Botany Year-2
19	VANDANA DEVI	M.Sc-Botany Year-2
20	ANSHIKA	M.Sc-Botany Year-2
21	KALPANA SINGH	M.Sc-Botany Year-2
22	MITHLESH JAISWAL	M.Sc-Botany Year-2
23	MANSI SINGH	M.Sc-Botany Year-2
24	Diksha sharma	M.Sc-Botany Year-2
25	PALLAVI PANDEY	M.Sc-Botany Year-2
26	ANKITA SONI	M.Sc-Botany Year-2
27	sadia khan	M.Sc-Botany Year-2
28	soni shukla	M.Sc-Botany Year-2
29	Afreen Bano	M.Sc-Botany Year-2
30	RUQAIYA FATIMA	M.Sc-Botany Year-2
31	RAJESH KUMAR	M.Sc-Botany Year-2
32	SHAMBHAVI TIWARI	M.Sc-Botany Year-2
33	MANJEET MISHRA	M.Sc-Botany Year-2
34	reena mishra	M.Sc-Botany Year-2
35	AYESHA BANO	M.Sc-Botany Year-2
36	RICHA SINGH	M.Sc-Botany Year-2
37	km soumya shukla	M.Sc-Botany Year-2
38	PALAK SRIVASTAVA	M.Sc-Chemistry Semester-1
39	ANKIT TIWARI	M.Sc-Chemistry Semester-1
40	neha pandey	M.Sc-Chemistry Semester-1
41	khushboo kasaundhan	M.Sc-Chemistry Semester-1
42	ANURAG MISHRA	M.Sc-Chemistry Semester-1
43	MOHIT TIWARI	M.Sc-Chemistry Semester-1
44	DHARMENDRA MISHRA	M.Sc-Chemistry Semester-1
45	JITENDRA SHUKLA	M.Sc-Chemistry Semester-1
46	YUGAL SINGH	M.Sc-Chemistry Semester-1

47	shivanjali pathak	M.Sc-Chemistry Semester-1
48	LALIT KUMAR	M.Sc-Chemistry Semester-1
49	chanchal pandey	M.Sc-Chemistry Semester-1
50	SONAM CHAUDHARY	M.Sc-Chemistry Semester-1
51	VIBHA TIWARI	M.Sc-Chemistry Semester-1
52	KIRTI SINGH	M.Sc-Chemistry Semester-1
53	rekha	M.Sc-Chemistry Semester-1
54	ASTHA SINGH	M.Sc-Chemistry Semester-1
55	manjay	M.Sc-Chemistry Semester-1
56	RAVI TIWARI	M.Sc-Chemistry Semester-1
57	VIKAS KUMAR SHARMA	M.Sc-Chemistry Semester-1
58	manisha verma	M.Sc-Chemistry Semester-1
59	vivek kumar	M.Sc-Chemistry Semester-1
60	SATYA OM TIWARI	M.Sc-Chemistry Semester-1
61	SATYA PRAKASH	M.Sc-Chemistry Semester-1
62	MAHENDRA PRATAP VERMA	M.Sc-Chemistry Semester-1
63	MONU VERMA	M.Sc-Chemistry Semester-1
64	VIVEK KUMAR	M.Sc-Chemistry Semester-1
65	SHASHANK DWIVEDI	M.Sc-Chemistry Semester-1
66	ALOK KUMAR TIWARI	M.Sc-Chemistry Semester-1
67	PINTU MISHRA	M.Sc-Chemistry Semester-1
68	MAYANK MANI MISHRA	M.Sc-Chemistry Semester-1
69	GULAB CHANDRA VERMA	M.Sc-Chemistry Semester-1
70	satish chand	M.Sc-Chemistry Semester-1
71	ROLI TIWARI	M.Sc-Chemistry Semester-1
72	RAM SHANKER	M.Sc-Chemistry Semester-1
73	SHIVNATH	M.Sc-Chemistry Semester-1
74	POOJA MISHRA	M.Sc-Chemistry Semester-1
75	upesh tiwari	M.Sc-Chemistry Semester-1
76	KM KHUSHBU TIWARI	M.Sc-Chemistry Semester-1
77	SONALI	M.Sc-Chemistry Semester-1
78	RAMAN SINGH	M.Sc-Chemistry Semester-1
79	MANISH KUMAR CHAUDHARY	M.Sc-Chemistry Semester-1
80	SHIV POOJAN	M.Sc-Chemistry Year-2
81	DIVYANSH PRATAP SINGH	M.Sc-Chemistry Year-2
82	archana	M.Sc-Chemistry Year-2
83	RAJNISH TIWARI	M.Sc-Chemistry Year-2
84	KANHAIYA LAL	M.Sc-Chemistry Year-2
85	Swati tiwari	M.Sc-Chemistry Year-2
86	SURYA PRAKASH	M.Sc-Chemistry Year-2
87	sanskriti pandey	M.Sc-Chemistry Year-2
88	neetu pandey	M.Sc-Chemistry Year-2
89	km pratima jaiswal	M.Sc-Chemistry Year-2
90	SHIVANGI MANJHWAR	M.Sc-Chemistry Year-2
91	SACHIN MISHRA	M.Sc-Chemistry Year-2
92	VIPIN YADAV	M.Sc-Chemistry Year-2
93	SHIV POOJAN	M.Sc-Chemistry Year-2

94	SANDEEP GUPTA	M.Sc-Chemistry Year-2
95	km sukanya verma	M.Sc-Chemistry Year-2
96	Bhaskar Mishra	M.Sc-Chemistry Year-2
97	Roli Mishra	M.Sc-Chemistry Year-2
98	anamika singh	M.Sc-Chemistry Year-2
99	SHABBEER AHMAD	M.Sc-Chemistry Year-2
100	Vinay kumar upadhyay	M.Sc-Chemistry Year-2
101	DEEPIKA PANDEY	M.Sc-Chemistry Year-2
102	ANKIT KUMAR MISHRA	M.Sc-Chemistry Year-2
103	MANSI PATHAK	M.Sc-Chemistry Year-2
104	Kajal shukla	M.Sc-Chemistry Year-2
105	MOHIT GUPTA	M.Sc-Chemistry Year-2
106	SHOBHIT MISHRA	M.Sc-Chemistry Year-2
107	KIRTIVARDHAN KUSHWAHA	M.Sc-Chemistry Year-2
108	siddhi singh	M.Sc-Chemistry Year-2
109	MARUTENDRA TIWARI	M.Sc-Chemistry Year-2
110	PALLAVI SINGH	M.Sc-Chemistry Year-2
111	shivam mishra	M.Sc-Chemistry Year-2
112	DURGESH KUMAR PANDEY	M.Sc-Chemistry Year-2
113	BAIJ NATH GUPTA	M.Sc-Chemistry Year-2
114	NIDHI DUBEY	M.Sc-Chemistry Year-2
115	ANJALI PATHAK	M.Sc-Physics Year-2
116	AMBALIKA SINGH	M.Sc-Physics Year-2
117	Mohan Bhaskar tiwari	M.Sc-Physics Year-2
118	km roshni shukla	M.Sc-Physics Year-2
119	RAGHVENDRA PRATAP	M.Sc-Physics Year-2
120	sandip kumar	M.Sc-Physics Year-2
121	MUSKAN GUPTA	M.Sc-Physics Year-2
122	MAHIMA PATHAK	M.Sc-Physics Year-2
123	HARSHA GUPTA	M.Sc-Physics Year-2
124	NANDITA BHARTI	M.Sc-Physics Year-2
125	KM SHRUTI KUMARI	M.Sc-Physics Year-2
126	PRIYA SHUKLA	M.Sc-Physics Year-2
127	NIHARIKA BHARTI	M.Sc-Physics Year-2
128	VANDANA JAISWAL	M.Sc-Physics Year-2
129	mata prasad yadav	M.Sc-Physics Year-2
130	vaishnavi shukla	M.Sc-Physics Year-2
131	pragya pandey	M.Sc-Physics Year-2
132	KM SHRADDHA SRIVASTAVA	M.Sc-Physics Year-2
133	PRADUMNA	M.Sc-Physics Year-2
134	ANUBHUTI SINGH	M.Sc-Physics Year-2
135	AMIT KUMAR MISHRA	M.Sc-Physics Year-2
136	MANOJKUMAR	M.Sc-Physics Year-2
137	SANDIP KUMAR MISHRA	M.Sc-Physics Year-2
138	VISHAL MISHRA	M.Sc-Physics Year-2
139	SHUBHAM VAISHYA	M.Sc-Physics Year-2
140	brijesh kumar pal	M.Sc-Physics Year-2

141	MONU KUMAR	M.Sc-Physics Year-2
142	ALOK KUMAR	M.Sc-Physics Year-2
143	RIYA TIWARI	M.Sc-Physics Year-2
144	uzma ansari	M.Sc-Physics Year-2
145	KAVITA PANDEY	M.Sc-Physics Year-2
146	riya singh	M.Sc-Physics Year-2
147	TULSIRAMPAL	M.Sc-Physics Year-2
148	SHWETA GUPTA	B.Sc Agricultural Semester-4
149	rohit kumar arya	B.Sc Agricultural Semester-4
150	VIVEK TIWARI	B.Sc Agricultural Semester-4
151	AMBRISH KUMAR	B.Sc Agricultural Semester-4
152	anil kumar verma	B.Sc Agricultural Semester-4
153	Jai Prakash shukla	B.Sc Agricultural Semester-4
154	SHASHI BHUSHAN SINGH	B.Sc Agricultural Semester-4
155	NEERAJ MISHRA	B.Sc Agricultural Semester-4
156	SANDEEP KUMAR SHUKLA	B.Sc Agricultural Semester-4
157	PANKAJ VERMA	B.Sc Agricultural Semester-4
158	NEERAJ RAO	B.Sc Agricultural Semester-4
159	SANDEEP KUMAR	B.Sc Agricultural Semester-4
160	SUBHAM KUMAR SHUKLA	B.Sc Agricultural Semester-4
161	ROHIT TIWARI	B.Sc Agricultural Semester-4
162	SHESHMANI SHUKLA	B.Sc Agricultural Semester-4
163	sanjay mishra	B.Sc Agricultural Semester-4
164	AVNEESH GUPTA	B.Sc Agricultural Semester-4
165	gaurav mishra	B.Sc Agricultural Semester-4
166	VIVEK KUMAR SHUKLA	B.Sc Agricultural Semester-4
167	BHANU PRAKASH TIWARI	B.Sc Agricultural Semester-4
168	ravi kumar	B.Sc Agricultural Semester-4
169	adarsh singh	B.Sc Agricultural Semester-4
170	KAUSHLENDRA PRATAP SINGH	B.Sc Agricultural Semester-4
171	shreya singh	B.Sc Agricultural Semester-4
172	AKHILESH KUMAR SHUKLA	B.Sc Agricultural Semester-4
173	DEV PRAKASH TIWARI	B.Sc Agricultural Semester-4
174	Shri Prakash Shukla	B.Sc Agricultural Semester-4
175	palak srivastava	B.Sc Agricultural Semester-4
176	krishna kumar	B.Sc Agricultural Semester-4
177	Nishant Dube	B.Sc Agricultural Semester-4
178	HIMANSHU CHATURVEDI	B.Sc Agricultural Semester-4
179	Akash Kumar Mishra	B.Sc Agricultural Semester-4
180	DURGESH TIWARI	B.Sc Agricultural Semester-4
181	ALOK KUMAR TIWARI	B.Sc Agricultural Semester-4
182	RAM KUSHAL	B.Sc Agricultural Semester-4
183	ADARSH SINGH	B.Sc Agricultural Semester-4
184	DURGESH	B.Sc Agricultural Semester-4
185	mohit pandey	B.Sc Agricultural Semester-4
186	PRASHANT MISHRA	B.Sc Agricultural Semester-4
187	FAIZAN ALI ANSARI	B.Sc Agricultural Semester-4

188	UMESH KANAUIYA	B.Sc Agricultural Semester-4
189	Mrityunjay Shukla	B.Sc Agricultural Semester-4
190	shiv shankar trivedi	B.Sc Agricultural Semester-4
191	Abhyuday shukla	B.Sc Agricultural Semester-4
192	MOHD NAEEM	B.Sc Agricultural Semester-4
193	MOHD SADIQ ALAM	B.Sc Agricultural Semester-4
194	deependra kumar chaurasia	B.Sc Agricultural Semester-4
195	SHAILENDRA PRATAP SINGH	B.Sc Agricultural Semester-4
196	AMIT TIWARI	B.Sc Agricultural Semester-4
197	RAHUL MAURYA	B.Sc Agricultural Semester-4
198	ASHUTOSH PANDEY	B.Sc Agricultural Semester-4
199	vishal kumar rao	B.Sc Agricultural Semester-4
200	MOHIT YADAV	B.Sc Agricultural Semester-4
201	masood ansari	B.Sc Agricultural Semester-4
202	RAHUL DUBEY	B.Sc Agricultural Semester-4
203	RAJESH KUMAR YADAV	B.Sc Agricultural Semester-4
204	SAMRIDH YADAV	B.Sc Agricultural Semester-4
205	JAI KISHAN GUPTA	B.Sc Agricultural Semester-4
206	ARVIND KUMAR	B.Sc Agricultural Semester-4
207	NUTAN SINGH	B.Sc Agricultural Semester-4
208	AKHILESH KUMAR YADAV	B.Sc Agricultural Semester-4
209	JATA SHANKER	B.Sc Agricultural Semester-4
210	ANUPRIYA JAISWAL	B.Sc Agricultural Semester-4
211	SAURABH KUMAR VERMA	B.Sc Agricultural Semester-4
212	HARISH	B.Sc Agricultural Semester-4
213	sachin mishra	B.Sc Agricultural Semester-4
214	VIKAS KUMAR MISHRA	B.Sc Agricultural Semester-4
215	vineet mishra	B.Sc Agricultural Semester-4
216	Harsh Ruhela	B.Sc Agricultural Semester-4
217	SANJAY VERMA	B.Sc Agricultural Semester-4
218	RASHMI CHAURASIYA	B.Sc Agricultural Semester-4
219	muneerah siddique	B.Sc Agricultural Semester-4
220	avanish maurya	B.Sc Agricultural Semester-4
221	SUPRIYA SINGH	B.Sc Agricultural Semester-4
222	SURaj kumar mishra	B.Sc Agricultural Semester-4
223	ashish tiwari	B.Sc Agricultural Semester-4
224	suneel kumar	B.Sc Agricultural Semester-4
225	manoj mishra	B.Sc Agricultural Semester-4
226	ARTI PANDEY	B.Sc Agricultural Semester-4
227	navneet srivastava	B.Sc Agricultural Semester-4
228	Shivam sahu	B.Sc Agricultural Semester-4
229	RITESH TIWARI	B.Sc Agricultural Semester-4
230	harsh verma	B.Sc Agricultural Semester-4
231	NITESH KUMAR OJHA	B.Sc Agricultural Semester-4
232	kamal ojha	B.Sc Agricultural Semester-4
233	ABHISHEK YADAV	B.Sc Agricultural Semester-4
234	RAHUL BAJPAYEE	B.Sc Agricultural Semester-4

235	ANKITA MISHRA	B.Sc Agricultural Semester-4
236	VANDANA TIWARI	B.Sc Agricultural Semester-4
237	sanober khatoon	B.Sc Agricultural Semester-4
238	neeraj tiwari	B.Sc Agricultural Semester-4
239	SATYENDRA SINGH	B.Sc Agricultural Semester-4
240	Anchal soni	B.Sc Bio Year-3
241	MANISH GOSWAMI	B.Sc Bio Year-3
242	jagdamba sharan sahu	B.Sc Bio Year-3
243	LAXMI SAHU	B.Sc Bio Year-3
244	rajit ram verma	B.Sc Bio Year-3
245	RAGINI PANDEY	B.Sc Bio Year-3
246	PRATIBHA GAUTAM	B.Sc Bio Year-3
247	Anamika Srivastva	B.Sc Bio Year-3
248	RUPALI SHUKLA	B.Sc Bio Year-3
249	SHANTI KASHYAP	B.Sc Bio Year-3
250	anshika tiwari	B.Sc Bio Year-3
251	Deepika Verma	B.Sc Bio Year-3
252	sakshi srivastva	B.Sc Bio Year-3
253	NISHA MAURYA	B.Sc Bio Year-3
254	UMA YADAV	B.Sc Bio Year-3
255	Amit KUMAR SINGH	B.Sc Bio Year-3
256	SHANI	B.Sc Bio Year-3
257	RUBY MISHRA	B.Sc Bio Year-3
258	PINKY YADAV	B.Sc Bio Year-3
259	unnat verma	B.Sc Bio Year-3
260	ANJANI DEVI	B.Sc Bio Year-3
261	GIRIJA SHANKAR TIWARI	B.Sc Bio Year-3
262	priya mishra	B.Sc Bio Year-3
263	anand kumar	B.Sc Bio Year-3
264	KM NEHA GAUTAM	B.Sc Bio Year-3
265	AKEESH KUMAR SONKAR	B.Sc Bio Year-3
266	AKASH VERMA	B.Sc Bio Year-3
267	BHASHKAR	B.Sc Bio Year-3
268	soni pandey	B.Sc Bio Year-3
269	rahul gupta	B.Sc Bio Year-3
270	vishal maurya	B.Sc Bio Year-3
271	SARVESH YADAV	B.Sc Bio Year-3
272	JIYA JAISWAL	B.Sc Bio Year-3
273	HITESH KUMAR KAUSHAL	B.Sc Bio Year-3
274	LAKSHMI MISHRA	B.Sc Bio Year-3
275	Mahtab Husain	B.Sc Bio Year-3
276	Himanshi Gaur	B.Sc Bio Year-3
277	Raman Shukla	B.Sc Bio Year-3
278	SUNAINA BAJPEI	B.Sc Bio Year-3
279	abhinandan tiwari	B.Sc Bio Year-3
280	YASHEE GUPTA	B.Sc Bio Year-3
281	abhilasha yadav	B.Sc Bio Year-3

282	SUBODH CHANDRA	B.Sc Bio Year-3
283	DIVYANSHI SINGH	B.Sc Bio Year-3
284	SAKSHI GUPTA	B.Sc Bio Year-3
285	ANKET PANDEY	B.Sc Bio Year-3
286	SHUBHI TIWARI	B.Sc Bio Year-3
287	KOMAL TIWARI	B.Sc Bio Year-3
288	KM MONU SHUKLA	B.Sc Bio Year-3
289	vikash kumar mishra	B.Sc Bio Year-3
290	SUBHAM KUMAR SHUKLA	B.Sc Bio Year-3
291	AshraH Meraj	B.Sc Bio Year-3
292	Mukesh Jayswal	B.Sc Bio Year-3
293	LAXMI JAISWAL	B.Sc Bio Year-3
294	UTKARSH SINGH	B.Sc Bio Year-3
295	pankaj mishra	B.Sc Bio Year-3
296	Ashutosh Mishra	B.Sc Bio Year-3
297	SUBHASH CHANDRA	B.Sc Bio Year-3
298	ajay kumar gautam	B.Sc Bio Year-3
299	TUSHAR BHATT	B.Sc Bio Year-3
300	vishnu singh	B.Sc Bio Year-3
301	SURYA PRAKASH CHATURVEDI	B.Sc Bio Year-3
302	rahul kumar	B.Sc Bio Year-3
303	manish chandra dubey	B.Sc Bio Year-3
304	MAMTA CHAUDHARI	B.Sc Bio Year-3
305	DIVYATA UPADHYAY	B.Sc Bio Year-3
306	asif umair	B.Sc Bio Year-3