

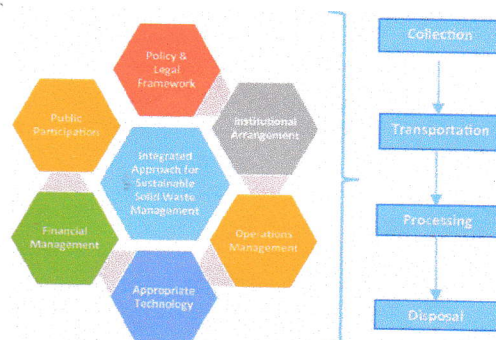
DEPARTMENT OF CHEMISTRY
SRI A. S. N. M GOVT. COLLEGE (A), PALAKOL, W.G Dist.,



CERTIFICATE COURSE IN SOLID WASTE MANAGEMENT
(2021-22)

Course Coordinator

Dr. V. YAMINI, Lecturer in Chemistry



CERTIFICATE COURSE
ON
“SOLID WASTE MANAGEMENT”
(30 DAYS)

Sl. No.	TOPIC	HOURS
Unit-I Types of Solid	<ul style="list-style-type: none"> • Agri Solid waste • Municipal solid waste • Domestic Waste • Hospital Solid waste • E-waste • Plastic waste 	9
Unit-II Municipal Solid Waste Characteristics	<ul style="list-style-type: none"> • Dumping yards • Landfills • Solid waste generation • Composition • Mechanical properties • Biodegradability 	6
Unit-III Transport and disposal of solid waste	<ul style="list-style-type: none"> • Collection • Segregation • Transport and disposal of solid waste • Reduce, reuse and recycle refuse collection systems • Transport and disposal of solid waste 	6
Unit-IV Solid Waste Treatments	<ul style="list-style-type: none"> • Landfills • Classification • Types and methods • Biological process • Composting • Thermal process • Wet oxidation, pyrolysis • Waste management through reduce, recycle and reuse • Innovate methods in solid waste management 	9

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Minutes of the Meeting

The Dept of Chemistry staff held meeting on 23/11/2021 and passed resolution to organize one certificate course that is **Solid Waste Management** under the guidance of Dr. V. Yamini respectively for 30 working days.

The Certificate Course in Solid Waste Management was organized from **24/11/2021 to 28/12/2021**, (4 PM to 5 PM) for the academic year 2021-2022 to the III B.Sc (MPC, BZC & MCCs) Students who are having Chemistry as one of the subject under curriculum enrichment program.

Signature of the Staff Members

Dr. V. Yamini, HOD of Chemistry, Course Co-ordinator.

V. Yamini
23/11/21

Dr. S. B. Ronald, Reader in Chemistry.

S. B. Ronald
23/11/21

Dr. M.V.V. Ramanjaneyulu, Lecturer in Chemistry.

M. V. V. Ramanjaneyulu
23/11/21

Dr. N.V.V. Simhadri, Lecturer in Chemistry.

N. V. V. Simhadri
23/11/21

A. S. N. M. Govt. College (A)
Signature of the Principal

PRINCIPAL
Sri A.S.N.M. GOVT. COLLEGE (A)
PALAKOL-534 260, W.G.DIST,

Report on Certificate Course in Solid Waste Management

Introduction;

Department of chemistry conducted a Certificate course in solid waste Management during the year 2021-2022 under curriculum enrichment programme.

Solid Waste Management is Collecting, Treating and disposing of solid material that is discarded. Municipal solid waste, commonly known as trash or garbage (US), or rubbish (UK) is a waste type consisting of everyday items we consume and discard. It predominantly includes food wastes, yard wastes, containers and product packaging and other miscellaneous inorganic wastes from residential, commercial, Industrial and Industrial Sources. Types of waste: Biodegradable waste, Recyclable material, inert waste, composite wastes & Domestic hazardous waste and toxic waste.

Objectives of solid waste Management:

- 1) The primary goal of solid waste Management is reducing and eliminating adverse impacts of waste materials on human health and the environment and superior quality of life.
- 2) The aim of waste to extract the maximum practical benefits from products and to generate the minimum amount of end waste.

Expected Specific Outcomes of Certificate Course

Upon successful completion of this course, students will be able to:

- To analyze different types of Solid wastes.
- Describe how to Minimize and dispose the Solid wastages.
- Understand how to reuse and recycle the Solid waste into useful things.
- Understand how to convert harmful waste into ECO friendly Products.
- Create the awareness for public regarding increase of pollution due to Solid Waste.
- Understand how to protect the life on the Earth from this solid waste.

List of students enrolled for Solid Waste Management: III.B.Sc. - CBZ., MPC., & MCCs

(24-11-2021 to 28-12-2021) 30 days from 5pm to 6pm.

S. No	Regd. No.	Name of the student	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
			24/11	25/11	26/11	27/11	29/11	30/11	30/11	1/12	2/12	3/12	6/12	7/12	8/12	10/12	12/12
	1921002	B. Madhavi	p	p	p	p	p	A	A	P	A	P	P	P	A	P	P
	1921003	Ch. Radha	P	A	P	A	A	P	P	A	P	P	A	A	P	P	P
	1921005	G. Rupemdhra	p	p	p	p	p	p	p	p	A	p	p	p	p	p	p
	1921006	G. Bhavani	p	p	p	A	p	p	p	A	p	p	p	p	A	p	p
	1921008	G. Neelima	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	1921010	N. Lavanya	p	p	A	p	p	p	A	p	p	p	p	A	p	A	p
	1921011	P. Laki babu	p	A	p	A	p	p	A	p	p	p	A	p	p	p	p
	1921012	R. Sirisha	p	A	p	p	A	p	p	A	p	p	p	p	A	p	p
	1921013	T. Jahnvi	p	p	p	A	A	p	p	p	p	A	p	p	A	p	p
	1921014	T. Yesumani	p	A	p	p	A	A	p	p	p	A	p	p	p	A	p
	1921015	V. Srivallika	p	p	p	p	p	p	A	p	p	p	p	A	p	p	p
	1921016	Y. Venkata lakshmi	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	1921017	Ch. Deepthi	p	A	p	p	p	p	p	A	p	p	p	A	p	p	p
	1921018	Ch. Srinaga lakshmi	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	1921019	D. Srinu	p	A	p	A	p	p	p	p	p	p	A	p	p	p	p
	1921022	M. Vijaya jyothi	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	1921024	M. Naga mani	p	p	A	p	p	p	A	p	p	p	A	p	p	p	p
	1921025	N. Nomeswari	p	p	p	p	p	p	p	p	p	p	p	p	p	p	p
	1921026	N. Raja gopal	p	A	p	p	A	p	p	p	A	p	p	p	p	A	p
	1921027	P. Siva krishna	p	p	p	p	p	p	p	A	p	p	p	p	p	p	p
	1925110	K. Manikanta	p	p	A	p	p	p	p	p	p	p	p	A	p	p	p
	1925108	B. Jagadeesh	p	A	p	p	p	p	p	A	p	p	p	p	A	p	p
	1925109	B. Balaji	P	P	A	P	P	A	P	P	A	P	P	A	P	P	A
	1925116	S. J. Ganesh	P	P	A	P	P	A	P	P	A	P	P	A	P	P	A

Sl. No	Regd. No.	Name of the Student	16	17	18	19	20	21	22	23	24	25	26	27	28	29
			13/12	14/12	14/12	15/12	16/12	17/12	18/12	18/12	20/12	21/12	21/12	22/12	23/12	27/12
	1921002	B. Madhavi	p	p	p	p	p	A	A	P	A	P	P	P	A	P
	1921003	Ch. Radha	P	A	P	A	A	P	P	A	P	P	A	A	P	P
	1921005	G. Rupemdhra	p	p	p	p	p	p	p	p	A	p	p	p	p	p
	1921006	G. Bhavani	p	p	p	A	p	p	p	A	p	p	p	p	A	p
	1921008	G. Neelima	p	A	p	p	p	A	p	p	p	A	p	p	A	p
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	1921011	P. Laki babu	p	A	p	A	p	p	A	p	p	p	A	p	p	p
	1921012	R. Sirisha	p	A	p	p	A	p	p	A	p	p	p	p	A	p
	1921013	T. Jahnvi	p	p	p	A	A	p	p	p	p	A	p	p	A	p
	1921014	T. Yesumani	p	A	p	p	A	A	p	p	p	A	p	p	p	A
	1921015	V. Srivallika	p	p	p	p	p	p	A	p	p	p	p	A	p	p
	1921016	Y. Venkata lakshmi	p	p	p	p	A	p	p	p	p	A	p	p	p	A
	1921017	Ch. Deepthi	p	A	p	p	p	p	p	A	p	p	p	A	p	p
	1921018	Ch. SriNagalakshmi	p	p	A	p	p	p	p	A	p	p	p	A	p	p
	1921019	D. Srinu	p	A	p	A	p	p	p	p	p	p	A	p	p	p
	1921022	M. Vijaya jyothi	p	A	p	p	A	p	p	p	A	p	p	A	p	A
	1921024	M. Naga mani	p	p	A	p	p	p	A	p	p	p	A	p	p	p
	1921025	N. Nomeswari	p	p	p	p	A	p	p	p	A	p	A	p	p	A
	1921026	N. Raja gopal	P	P	P	A	P	P	P	A	P	P	P	A	P	P
	1921027	P. Siva krishna	P	P	P	P	A	P	P	A	P	P	A	P	P	P
	1925110	K. Manikanta	P	P	A	P	P	A	P	P	A	P	P	A	P	P
	1925108	B. Jagadeesh	P	P	P	A	P	P	A	P	P	A	P	P	A	P
	1925109	B. Balaji	P	A	P	P	A	P	P	A	P	P	A	P	P	A
	1925116	S. J. Ganesh	P	P	A	P	P	A	P	P	A	P	P	A	P	P

MULTIPLE CHOISE QUESTION PAPER ON

SOLID WASTE MANAGEMENT

Time: 30 Min

Maximum Marks: 2x25=50M

1. The aerobic method of mechanical composting practiced is called.
 - a) Indore method
 - b) Nagpur method
 - c) Bangalore method
 - d) Bhopal method
2. Sludge bulking can be controlled by.
 - a) Chlorination
 - b) Coagulation
 - c) Aeration
 - d) Denitrificaiton
3. The disposal of the screen in done by.
 - a) Sedimentation
 - b) Flocculation
 - c) Filtration
 - d) Incineration
4. Solid waste treatment by pyrolysis refers to.
 - a) Treating with chemicals before heating.
 - b) No heating.
 - c) Heating in presence of air.
 - d) Heating in absence of air.
5. The Major constituent gases produced from a landfill site are.
 - a) Carbon dioxide and methane.
 - b) Ammonia and Hydrogen.
 - c) Carbon monoxide and nitrogen.
 - d) Hydrogen sulphide and oxygen.

6. An engineered facility for the disposal of Municipal solid waste is called.
 - a) Septic Tank.
 - b) Sanitary Landfills.
 - c) Dug wells.
 - d) Tandom Landfills.
7. How many main components are there in integrated waste management.
 - a) One
 - b) Two
 - c) Three
 - d) Four
8. Which of the following can be recycled many times?
 - a) Plastic.
 - b) Wood.
 - c) Organic materials.
 - d) Aluminum.
9. Why the recycled paper is banned for use in food containers?
 - a) Because it creates contamination.
 - b) Because it creates a lot of spaces.
 - c) Because paper can be used only one time.
 - d) Because paper is very thick and cannot cover the food containers.
10. What is the most expensive component of solid waste handling?
 - a) Collection
 - b) Storage.
 - c) Treatment.
 - d) Separation.
11. How does an organic Material decompose in the buried solid waste?
 - a) By the action of micro organisms.
 - b) By the action of Oxidation.
 - c) By the said particles.
 - d) By the flow of water.

12. The maximum C/N ratio in Municipal solid waste compost is.
- a) 10%
 - b) 20%
 - c) 30%
 - d) 40%
13. Why burning waste is not acceptable practice of solid waste management.
- a) Because it is very costly.
 - b) Because it requires modern technologies.
 - c) Because it cause several environmental issues.
 - d) Because it requires lot of space.
14. Which of the integrated waste management is reduced on the individual level?
- a) Source reduction.
 - b) Recycling.
 - c) Disposal.
 - d) Burning.
15. Why plastics are difficult to recycle.
- a) Because it is very hard material.
 - b) Because it is very adhesive in its nature.
 - c) Because of different types of polymer resins.
 - d) Because of different sizes of plastic.
16. Which of the following ones is the simplest and most common method used in the cities to Dump the wastes that are collected?
- a) River.
 - b) Ocean.
 - c) Landfill.
 - d) None of the abuse.
17. Bangalore and Indore process of composing are which of the following?
- a) Both anaerobic processes.
 - b) Both aerobic processes.
 - c) Anaerobic and aerobic process respectively.
 - d) Aerobic process and anaerobic process respectively.

18. Which of the following material is used as landfill sealants for the control of gas and leachate movement?

- a) Lime.
- b) Sand.
- c) Fly ash.
- d) Bentonite.

19. The best method of disposal of refuse to ensure complete destruction of pathogenic bacteria is by.

- a) Land disposal.
- b) Incineration.
- c) Pulverisation.
- d) Mechanical composting.

20. In solid waste management, waste utilized in achieved by.

- a) Recover, reclamation of reproduce.
- b) Recover, reclamation and recycling.
- c) Recover, recycling and reproduce.
- d) Recover, reproduce and recycling.

21. What is the advantage of waste to energy?

- a) It is economical.
- b) Recover useful energy.
- c) High degree of Sophistication is required.
- d) None of the above.

22. What is a Geo-net?

- a) A synthetic material used for drainage of liquids.
- b) A synthetic material used for drainage of Gases.
- c) A Ceramic material used for drainage of liquid.
- d) A fibrous material used for drainage of liquid.

23. Identify the wastes that are known on the Municipal solid waste from the following.

- a) Wood pieces.
- b) Plastic cans.
- c) Food wastes.
- d) All of the above.

24. What are the two main products of anaerobic digestion?

- a) Carbon monoxide and hydrogen.
- b) Methane and carbon dioxide.
- c) Methane and carbon monoxide.
- d) Hydrogen and carbon dioxide.

25. Which of the following is produced about from acetates in acetogenesis step in anaerobic digestion?

- a) Carbon monoxide.
- b) Charcoal.
- c) Carbon dioxide.
- d) Acetone.

Answers:

1. a
2. a
3. d
4. d
5. a
6. b
7. d
8. d
9. d
10. c
11. a
12. c
13. c
14. a
15. c
16. c
17. c
18. d
19. a
20. b
21. b
22. a or b
23. c
24. b
25. c

Marks obtained in Solid Waste Management

Date: 28-12-2021.

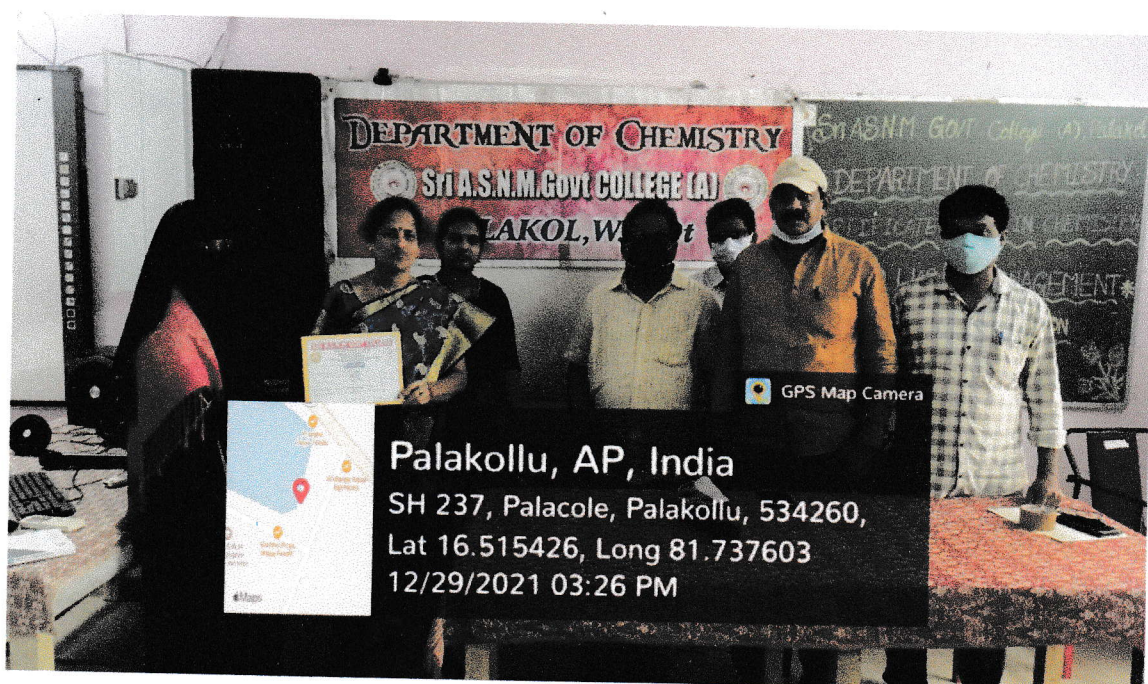
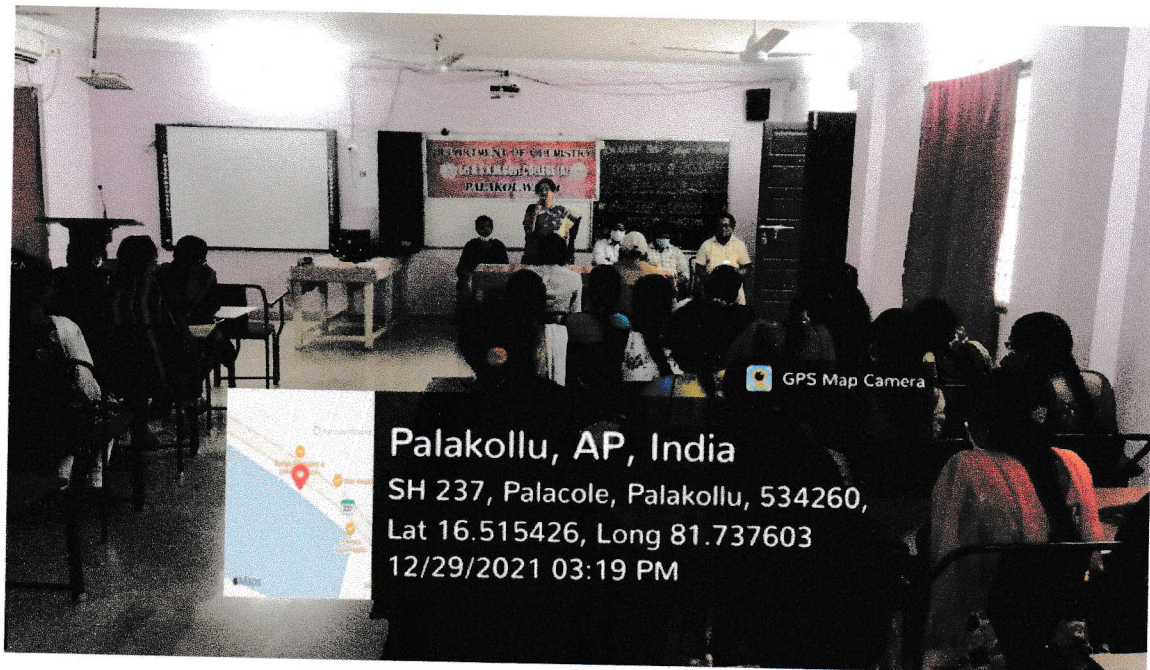
S.No.	Regd. No.	Name of the Student	Marks Obtained
1	1921002	B. Madhavi	48
2	1921003	Ch. Radha	47
3	1921005	G. Rupemdhra	50
4	1921006	G. Bhavani	47
5	1921008	G. Neelima	48
6	1921010	N. Lavanya	49
7	1921011	P. Laki babu	47
8	1921012	R. Sirisha	48
9	1921013	T. Jahnavi	50
10	1921014	T. Yesumani	47
11	1921015	V. Srivallika	49
12	1921016	Y. Venkata lakshmi	50
13	1921017	Ch. Deepthi	49
14	1921018	Ch. Srinaga lakshmi	47
15	1921019	D. Srinu	47
16	1921022	M. Vijaya jyothi	48
17	1921024	M. Naga mani	47
18	1921025	N. Nomeswari	47
19	1921026	N. Raja gopal	49
20	1921027	P. Siva krishna	46
21	1925110	K. Manikanta	50
22	1925108	B. Jagadeesh	46
23	1925109	B. Balaji	49
24	1925116	S. J. Ganesh	46

Conclusion:

1. This certificate course mainly carried out to create awareness of the problems occur due to Solid Wastes among the Students at the college level.

References:

1. Jagbir Singh Dept. of Geography Swami Shraddhanand College University of Del



Model certificate:



Sri A.S.N.M. Government College(A)

NAAC REACCREDITED WITH 'B' GRADE (CGPA 2.61)

Palakol, W. G. Dt, A.P-534260

Certificate Course on

SOLID WASTE MANAGEMENT

This is to certify that Ms/Mr -----

had successfully completed certificate course on "Solid Waste management"

Through Department of Chemistry from

----- to -----

Course Co-Ordinator

IQAC Co-Ordinator

Principal

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