



# RAMCO INSTITUTE OF TECHNOLOGY

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## Department of Civil Engineering

Academic Year 2022 – 2023 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. Civil Engineering

Course Code & Title: CE3303 Water Supply and Wastewater Engineering

Name of the Faculty member (s): Mrs. C. Subha

### Innovative Practice Description

- **Unit / Topic:** Unit V / Sludge Treatment and Disposal
- **Course Outcome:** CO5
- **Topic Learning Outcome:** TLO16-21
- **Activity Chosen:** Visible Quiz
- **Justification:**
- **Time Allotted for the Activity:** 10 Minutes
- **Details of the Implementation:**
  - 10 questions on the topic of sludge treatment and disposal are prepared in a PowerPoint presentation.
  - The students were split into a group of 2 members.
  - Each group was given a paper to write down the answer to each question.
  - The members will write the answer in the paper given. Finally, the paper was interchanged with the group and discussed the correct answers.
- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO7	PSO4
CO2	3	2	2	1

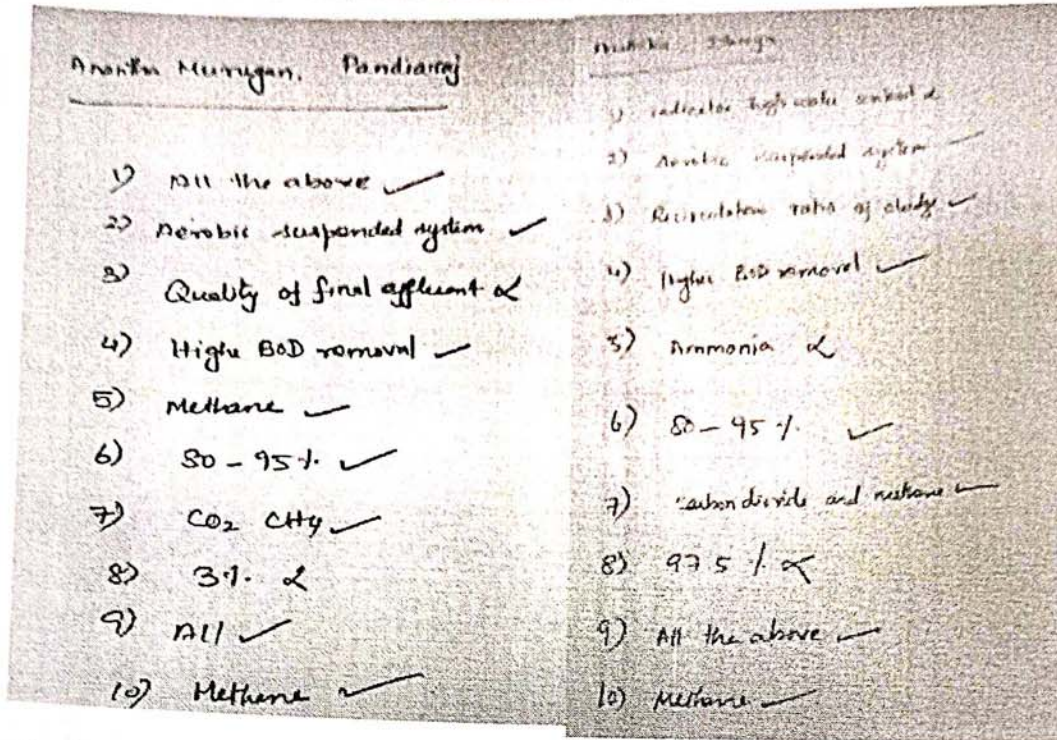
(1 – Low      2 – Moderate      3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO7	PSO4
	3	2	2	2
<b>Justification for correlation</b>	Students will apply basic science and engineering knowledge in sludge treatment and disposal.	Students will analyze and solve problems related to sludge volume calculation and moisture content determination.	Students will learn the procedures of sludge treatment and disposal in the societal and environmental context.	Design of sludge treatment units as civil engineers.



### Images / Screenshot of the practice:



### Reflective Critique:

#### Feedback on practice from students and other stakeholders:

The students felt it was easy to remember and recollect the concepts learned in sludge characterization, conditioning, dewatering, and disposal.

#### The benefit of the practice:

- This activity helped the students to quickly recap whatever they had learned regards sludge characterization, conditioning, dewatering, and ultimate sludge disposal.
- A visible quiz is a team-based activity that supports collaborative learning through which the concepts will be clarified.

#### Challenges faced in implementation:

- This activity was planned for 10 minutes, but it took 15 minutes to complete that discussion.

### References:

1. Garg, S.K. Environmental Engineering, Vol.Khanna Publishers, New Delhi, 2010.
2. Punmia, B.C., Ashok Jain and Arun Jain, Water Supply Engineering, Laxmi Publications (P) Ltd., New Delhi, 2014.

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