VIT

Vellore Institute of Technology

(Deemed to be University under section 3 of UGC Act, 1956)

Continuous Assessment Test - I February 2024

Programme	:	B.Tech	Semester	:	WIN2023-2024
Course Title	:	Waste Management	Code	:	BCLE215L
			Class Nbr	:	CH2023240503299
Faculty	:	**Dr. Anjali Gopakumar**	Slot	:	G2+TG2
Time	:	**90 mints**	Max. Marks	:	50

Answer all the Questions

(5 x 10 = 50 Marks)

Sl. No	Question Description	Marks
1.	Students were developing small scale compost in a bin as a part of their project work. The wastes added to the compost include food waste (slurry), vegetable scraps, coconut husks, layers of soil and a small volume of cow dung slurry. After few weeks, large amount of maggots were observed in the bin and the compost was looking heavily moist. Even after leaving the compost for more than three weeks they couldn't obtain good compost. Analyse what might have gone wrong based on factors responsible for a matured compost. What all steps they need to take to obtain good matured compost?	5+5
2.	"Understanding the physical, chemical and biological characteristics of the solid waste help in selecting the appropriate transformation processes or recovery methods" Explain the sentence with two appropriate examples.	5+5
3.	Elaborate on the significance of the paradigm shift from traditional waste hierarchy to modern pragmatic waste hierarchy incorporating 3R's or 7R's. Also, Explain the transformation by considering a suitable waste. Explain how India can attain the modern pragmatic waste hierarchy.	4+3+3
4.	As a responsible citizen, Mention any **FIVE** strategies that **YOU** would incorporate to reduce your contribution in solid waste production and improve their management. Select any two kind of wastes commonly generated by you and explain.	5+2.5+2.5
5.	Using a neatly labelled figure explain the various hauling system pathways used for transportation. Identify a suitable transportation system for transporting a) Construction waste and other bulky waste b) Biodegradable waste, Yard trimming etc.	5+2.5+2

*****All the Best*****

Reg. No.:

Name :

21BCE1508

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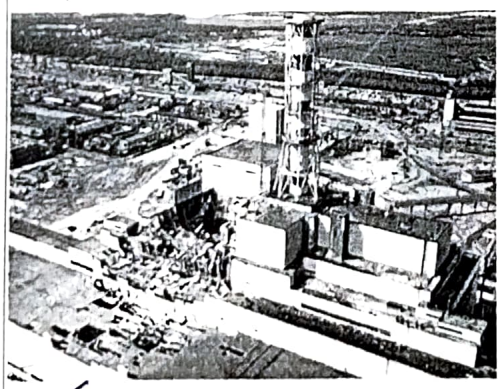
Continuous Assessment Test - II April 2024

Open Book Exam

Programme	:	B.Tech (all programmes)	Semester	:	WIN2023-2024
Course Title	:	Waste Management	Code	:	BCLE215L
			Class Nbr	:	CH2023240503299
Faculty	:	**Dr. Anjali Gopakumar**	Slot	:	G2+TG2
Time	:	**90 mints**	Max. Marks	:	**50**

Answer all the Questions

(5 x 10 = 50 Marks)

S.No	Question Description	Marks
1.	"The marvellous discovery of radioactivity was considered as an utmost threat later" Justify the statement with **two** appropriate examples.	**10 (5+5)**
2.	a) Arrange the following based on the impact of ionizing radiation (Ascending order). Explain based on the average units of radioactivity displayed. **Background irradiation, Smokers lungs, CT Scan, X rays, UV Radiation, Radiation from mobiles, Chernobyl reactor, Eating Banana** b) Elaborate on both internal and external pathways through which human beings are exposed to ionizing radiation.	**10 (4+6)**
3.	Create a clear and detailed illustration depicting the various bioremediation techniques utilized in hazardous waste management. Furthermore, explain how biological methods outperform chemical and physical methods in treating hazardous wastes, aligning with the cradle-to-grave concept	**10 (6+4)**
4.	Identify the hazardous episodes from the pictures and explain the following Questions a)  b)  i) Which among these had immediate impact and global attention? ii) Which among these had long-term impacts of exposure to hazardous chemicals? iii) Explain the major socioeconomic, environmental and political changes brought to world after both the disaster.	**10 (2+1+1+6)**

8.	Elaborate on the significance of emerging wastes management. Select any **one** emerging waste from the following list 1) Plastics waste 2) Glass waste 3) Agricultural waste 4) PCPs 5) Space waste 6) E-waste 7) Oil exploration and production waste Answer the following questions a) List the major sources of generation for the selected emerging waste. b) Explain the major environmental hazards caused by the selected waste. c) Suggest few remedial/reclaimable measures for the selected wastes	**10 (3+2+2+3)**

*****All the Best*****

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Reg. No. : 21BCE1808

Final Assessment Test (FAT) - May 2024

Programme	**B.Tech.**	Semester	**WINTER SEMESTER 2023 - 24**
Course Title	**WASTE MANAGEMENT**	Course Code	**BCLE215L**
Faculty Name	**Prof. Anjali Gopakumar**	Slot	**G2+TG2**
		Class Nbr	**CH2023240503299**
Time	**3 Hours**	Max. Marks	**100**

General Instructions:

- Write only Register Number in the Question Paper where space is provided (right-side at the top) & do not write any other details.

Answer any 10 questions (10 X 10 Marks = 100 Marks)

01. a) What are the emerging challenges in waste management due to rapid urbanization, and how can innovative applications address these issues? [5 Marks] **[10]**

b) Can you provide examples of practical solutions implemented in urban areas to mitigate the impact of increased waste generation? [5 Marks]

02. a) What are the primary problems associated with waste management, particularly in urban settings, and how can innovative technologies offer practical solutions to mitigate these challenges? [5 Marks] **[10]**

b) Can you provide examples of successful implementations of such solutions in addressing issues like pollution, resource depletion, or inefficient waste disposal? [5 Marks]

03. a) What methodologies and technologies are utilized in characterizing waste, and how do these processes contribute to better waste management strategies? [5 marks] **[10]**

b) Can you provide examples of how waste characterization has been instrumental in informing recycling programs or waste-to-energy initiatives?" [5 Marks]

04. How do Circular Economy policies contribute to achieving Sustainable Development Goals (SDGs), and what are some effective strategies for integrating these policies into sustainable development agendas? **[10]**

05. Illustrate the various features of a secured landfill using a neatly labeled figure. How do secure landfills and treatment techniques enhance waste management practices? **[10]**

06. Differentiate between radioactivity and radioactive decay. Explain the significant pros and cons of energy generation through radioactivity. **[10]**

07. Identify a few common hazardous materials we handle in our everyday lives. Explain primary remediation techniques that can be used to treat them. **[10]**

[10]

08. Write short notes on: [Each 2.5 Marks]
   a) Sludge management
   b) Incineration
   c) Anaerobic digestion
   d) Composting

[10]

09. Expand and explain the terms [Each 2.5 Marks]
   a) PPP
   b) EPR
   c) NIMBY Syndrome
   d) 5 R's

[10]

10. Elaborate on the emerging wastes [Each 5 Marks]
   a) Plastic pollution in the marine environment
   b) Agricultural wastes

[10]

11. Compare and contrast [Each 5 Marks]
   a) Hazardous waste management and solid waste management
   b) E-waste and biodegradable waste

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