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GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Seventh Semester – Regular) Examinations, November – 2022

BPECH7020 / BPEPR7020 – Integrated Solid Waste Management

(Chemical Engg. / PCPR)

Time: 3 hrs

Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)

(1 x 10 = 10 Marks)

- Q.1. Answer ALL questions** [CO#] [PO#]
- | | | |
|--------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| a. Why mismanagement of battery waste is harmful? | CO4 | PO1 |
| (i) Texture | | |
| (ii) Heavy metals | | |
| (iii) Plastics | | |
| (iv) Odor | | |
| b. The process of burning municipal solid waste under suitable temperature and conditions in a specific furnace is called_____ | CO1 | PO1 |
| (i) Land-filling | | |
| (ii) Incineration | | |
| (iii) Recycling | | |
| (iv) Vermicomposting | | |
| c. Which waste can be decomposed by bacteria? | CO2 | PO1 |
| (i) Food waste | | |
| (ii) Ashes | | |
| (iii) Radioactive waste | | |
| (iv) Rubbish | | |
| d. Which can be recycled many times? | CO4 | PO1 |
| (i) Aluminium | | |
| (ii) Plastic | | |
| (iii) Wood | | |
| (iv) Organic materials | | |
| e. How many key characteristics of sanitary land-fill are there? | CO2 | PO1 |
| (i) 2 | | |
| (ii) 4 | | |
| (iii) 8 | | |
| (iv) 0 | | |
| f. The burning of solid waste is not recommended because | CO2 | PO1 |
| (i) It is very costly | | |
| (ii) It requires a lot of space | | |
| (iii) It requires modern technology | | |
| (iv) It causes several environmental issues | | |
| g. Which of the following is done on an individual level? | CO1 | PO1 |
| (i) Burning | | |
| (ii) recycling | | |
| (iii) Source reduction | | |
| (iv) disposal | | |
| h. Which of the following area has least chance of producing biomedical waste? | CO3 | PO1 |
| (i) Clinics | | |
| (ii) Hospital | | |
| (iii) Agriculture | | |
| (iv) Laboratories | | |
| i. Which condition is not suited for aerobic composting? | CO2 | PO1 |
| (i) Simple process | | |
| (ii) Low cost | | |
| (iii) Easy method | | |
| (iv) Very expensive | | |
| j. Methane gas is released due to | CO2 | PO1 |
| (i) Proper segregation | | |
| (ii) Improper segregation | | |
| (iii) Disposal | | |
| (iv) Dumping | | |

PART – B: (Short Answer Questions)**(2 x 10 = 20 Marks)**Q.2. Answer ALL questions

	[CO#]	[PO#]
a. What is the indication of yellow colored-dustbin used in hospital?	CO2	PO1
b. Why clay liner is given at the bottom of land-filling?	CO3	PO1
c. Write about u-list hazardous waste.	CO4	PO1
d. Write the sources of biomedical waste.	CO3	PO1
e. Write different reasons of solid waste generation.	CO1	PO1
f. What is the objective of waste management?	CO1	PO1
g. Differentiate between community bins and door to door waste collection.	CO2	PO1
h. Write the importance of segregation of solid waste.	CO1	PO1
i. Write the impacts of bio-waste on the living organisms.	CO2	PO1
j. What are different category of hazardous waste?	CO4	PO1

PART – C: (Long Answer Questions)**(10 x 4 = 40 Marks)**Answer ALL questions

	Marks	[CO#]	[PO#]
3. a. Describe the design and operation of a sanitary landfill with a neat sketch.	10	CO2	PO1
(OR)			
b. Describe the composting process in details with neat sketch.	6	CO2	PO1
c. Explain the composition of solid waste in details.	4	CO2	PO1
4. a. Describe about the different solid waste collection systems with neat sketch.	5	CO1	PO1
b. Explain the thermal treatment process of solid waste processing.	5	CO1	PO1
(OR)			
c. Write in details about the sources of solid waste.	5	CO1	PO1
d. Explain the different characteristics of solid waste.	5	CO1	PO1
5. a. Write the transportation process of hazardous waste.	5	CO4	PO1
b. Explain the disposal methods of hazardous waste.	5	CO4	PO1
(OR)			
c. Describe different category for classification of hazardous waste?	6	CO4	PO1
d. Write down the characteristics of hazardous waste.	4	CO4	PO1
6. a. Explain the segregation process of e-waste.	5	CO3	PO1
b. Explain the collection methods of biomedical waste.	5	CO3	PO1
(OR)			
c. Explain the adverse health and environmental impacts due to improper handling of e- waste.	6	CO3	PO1
d. State the key role of public in solid waste management.	4	CO3	PO7

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