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GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Eight Semester – Regular) Examinations, April– 2024

BPECH8010 - Pollution and its Control

(Chemical)

Time: 3 hrs

Maximum: 70 Marks

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.	NO _x formation can be minimized by		CO3	PO2
	(i) Designing of burner to minimize the supply of oxygen	(ii) By injecting water into the combustion chamber		
	(iii) by using staged combustion	(iv) All the above		
b.	For unstable atmosphere which condition is applicable?		CO1	PO1
	(i) ALR=DALR	(ii) ALR>DALR		
	(iii) ALR<DALR	(iv) None of the above		
c.	Which element in CFC damages the ozone layer?		CO4	PO1
	(i) Carbon	(ii) Fluorine		
	(iii) Chlorine	(iv) None of the above		
d.	Which gas is mainly produced due to incomplete burning of wood?		CO1	PO2
	(i) CO	(ii) SO ₂		
	(iii) NO ₂	(iv) NO ₃		
e.	Which of the following is a coagulant?		CO1	PO1
	(i) Aluminium sulphate	(ii) Ferrous sulphate		
	(iii) Ferric chloride	(iv) All the above		
f.	Which of these is not a type of grit chamber?		CO3	PO2
	(i) Horizontal flow	(ii) Vortex		
	(iii) Vertical flow	(iv) Aerated		
g.	The process of burning of municipal solid waste at high temperature is called		CO1	PO1
	(i) Incineration	(ii) Composting		
	(iii) Land filing	(iv) Shredding		
h.	In which method of disposal of municipal solid waste, the waste is dumped in the soil?		CO2	PO2
	(i) Incineration	(ii) Composting		
	(iii) Land filing	(iv) Shredding		
i.	. _____ is a liquid that passes through solid waste and extract suspended impurities from it.		CO3	PO1
	(i) Leachate	(ii) Sludge		
	(iii) Distilled water	(iv) Municipal waste		
j.	The main purpose of Environmental Impact Assessment is for _____.		CO1	PO1
	(i) Environmental protection	(ii) Increasing product		
	(iii) Saving energy	(iv) Saving water		

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

	[CO#]	[PO#]
a. Draw the temperature profile for trapping in plume behaviour.	CO3	PO2
b. Differentiate lofting and fumigating.	CO2	PO2
c. An air conditioner generates a noise level of 75 dB for 5 min every hour. If the background noise level is 55 dB, compute equivalent noise level L_{Aeq} ?	CO2	PO2
d. Write the objective of waste water treatment.	CO1	PO1
e. Define BOD and COD of waste water.	CO3	PO3
f. What are the recommended methods of for removal of floating materials and suspended solids from waste water?	CO3	PO3
g. Differentiate on process and off process recycle of solid waste minimization.	CO1	PO1
h. How can the strength of solid waste be reduced by neutralization?	CO3	PO3
i. Write four major sources of hazardous waste generation.	CO1	PO1
j. What are the precautions taken for handling the hazardous waste?	CO2	PO1

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

	Marks	[CO#]	[PO#]
3. a. How do you separate the gaseous pollutants present in air by condensation method?	5	CO2	PO2
b. What are the factors affecting the noise pollution? Briefly explain it.	5	CO3	PO2
(OR)			
c. Discuss the plume behaviour of looping, coning and lofting with sketches of stack plumes and temperature profile	10	CO2	PO2
4. a. Briefly discuss about the contaminants present in industrial waste water.	5	CO1	PO1
b. What is the four type equalization in industrial waste water treatment? Explain it.	5	CO1	PO1
(OR)			
c. What are the different steps of preliminary treatment of waste water? Explain briefly.	10	CO3	PO3
5. a. Discuss about the environmental sanitation methods employed at hostels and swimming pool.	10	CO3	PO2
(OR)			
b. Describe the methods separating the solid waste based on their characteristics.	5	CO1	PO3
c. Write short notes on composting of waste materials.	5	CO1	PO1
6. a. Discuss about the source and classification of hazardous waste.	5	CO1	PO1
b. Write the characteristics of nuclear wastes.	5	CO1	PO1
(OR)			
c. Discuss about the fluidized bed combustion method with neat diagram for the incineration of hazardous waste.	10	CO3	PO2

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