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Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University)



B. Tech (Eighth Semester - Regular) Examinations, April - 2026

22BCHPE48011 – Pollution and its Control

(Chemical Engineering)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

- | | CO # | Blooms Level |
|--|------|--------------|
| a. Name any two particulate control devices and state their basic function. | CO2 | K1 |
| b. What is ISO 14000? State its role in environmental management. | CO6 | K2 |
| c. What is meant by volume reduction in wastewater management? Give one example. | CO2 | K2 |
| d. What is composting? State one advantage of composting. | CO3 | K1 |
| e. What is biomedical waste? Give one example. | CO2 | K1 |

PART – B

(15 x 4 = 60 Marks)

Answer **ALL** the questions

- | | Marks | CO # | Blooms Level |
|---|-------|------|--------------|
| 2. a. Explain various air pollution control methods. Classify them and discuss their effectiveness in industrial applications. | 7 | CO1 | K2 |
| b. Describe the working principles, advantages, and limitations of different particulate control devices such as cyclone separators, bag filters. | 8 | CO2 | K2 |
| (OR) | | | |
| c. Define noise pollution and explain various noise standards for industrial, residential, and silent zones. Discuss their significance. | 8 | CO4 | K2 |
| d. Discuss various noise control methods at source, along the path, and at the receiver level with suitable examples. | 7 | CO4 | K4 |
| 3.a. Explain various strategies for industrial wastewater pollution control with suitable examples. | 7 | CO1 | K2 |
| b. Discuss the methods of volume reduction and strength reduction in industrial wastewater management. | 8 | CO2 | K2 |
| (OR) | | | |
| c. Discuss the structure, working, advantages, and limitations of Common Effluent Treatment Plants (CETPs). | 8 | CO4 | K4 |
| d. Analyze the need and benefits of recirculation and reuse of industrial wastewater in industries. | 7 | CO5 | K4 |
| 4.a. Discuss various methods of separation and processing of solid waste, including recycling and resource recovery techniques. | 7 | CO2 | K4 |
| b. Explain the principles, advantages, and limitations of incineration as a method of solid waste treatment. | 8 | CO3 | K3 |
| (OR) | | | |
| c. Evaluate environmental sanitation methods adopted for hostels, hotels, hospitals. | 8 | CO3 | K4 |
| d. Design a low-cost rural sanitation system incorporating waste disposal and hygiene practices. | 7 | CO4 | K3 |
| 5.a. Explain the concept and characteristics of hazardous waste. Discuss the criteria used for its classification. | 8 | CO1 | K2 |
| b. Discuss the sources, characteristics, and management of nuclear waste. | 7 | CO2 | K2 |
| (OR) | | | |
| c. Define sustainable development. Explain its key elements and principles. | 8 | CO5 | K2 |
| d. Discuss various indicators of sustainable development and their importance in environmental management. | 7 | CO5 | K4 |

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