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**BRAINWARE UNIVERSITY****Term End Examination 2024-2025****Programme – B.Tech.(CE)]-2021****Course Name – Industrial Waste Management****Course Code - OEC-CE801A****(Semester VIII)***Library*Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125**Full Marks : 60****Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A**(Multiple Choice Type Question)****1 x 15=15**

1. *Choose the correct alternative from the following :*

- (i) Identify the major source of industrial pollution.
 - a) Residential waste
 - b) Agricultural runoff
 - c) Industrial discharge
 - d) Rainwater
- (ii) Identify the most common type of industrial pollution.
 - a) Air pollution
 - b) Noise pollution
 - c) Land pollution
 - d) All of these
- (iii) Identify the main goal of cleaner production.
 - a) Reduce pollution
 - b) Increase waste production
 - c) Promote fossil fuel usage
 - d) Increase material wastage
- (iv) Identify the first step in a waste management approach.
 - a) Waste Audit
 - b) Waste Disposal
 - c) Landfilling
 - d) Incineration
- (v) Identify the main characteristic of hazardous waste.
 - a) Biodegradable
 - b) Non-toxic
 - c) Corrosive
 - d) Odorless
- (vi) Select the most effective method for treating highly toxic hazardous waste.
 - a) Composting
 - b) Incineration
 - c) Open dumping
 - d) Land application
- (vii) Select the method used to stabilize hazardous waste chemically.
 - a) Open dumping
 - b) Secure landfilling
 - c) Solidification
 - d) Recycling
- (viii) Select the best material for preventing hazardous waste leakage in landfills.
 - a) Clay
 - b) Plastic liners
 - c) Wood chips
 - d) Sand
- (ix) Select the hazardous waste management technique that reduces environmental impact.

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- a) Open burning b) Secure landfilling
c) Illegal dumping d) Ocean disposal
- (x) Select the correct treatment method used for chromium removal in tannery effluent.
a) Precipitation b) Adsorption
c) Ion exchange d) All of the above
- (xi) Choose the primary reason for using neutralization in wastewater treatment.
a) To remove heavy metals b) To adjust pH
c) To kill bacteria d) To remove suspended solids
- (xii) Choose the best method for treating toxic industrial effluents.
a) Biodegradation b) Chemical oxidation
c) Neutralization d) Precipitation
- (xiii) Choose the treatment used for oily wastewater from industries.
a) Dissolved air flotation b) Filtration
c) Chlorination d) Neutralization
- (xiv) Choose the best method for dewatering sludge.
a) Centrifugation b) Filtration
c) Ion exchange d) Adsorption
- (xv) Choose the best method for combined treatment of industrial and municipal wastewater.
a) Trickling filter b) Activated sludge process
c) Neutralization d) Reverse osmosis

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Define industrial pollution and its sources. (3)
3. Explain the role of process modification in reducing industrial waste. (3)
4. Classify different types of hazardous wastes. (3)
5. Define industrial pollution and its major sources. (3)
6. Distinguish between equalization and neutralization in industrial wastewater treatment. (3)

OR

Justify the importance of residue management in industrial waste disposal. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Classify different types of waste generated in industries. (5)
8. Describe the role of environmental legislations in controlling industrial pollution. (5)
9. Explain the role of bioassay studies in environmental monitoring. (5)
10. Differentiate between short-term and long-term hazardous waste storage methods. (5)
11. Distinguish between residue management and disposal techniques. (5)
12. Compare the treatment flowsheets of sugar and dairy industries. (5)

OR

Compare the environmental impact of untreated waste from steel plants and paper industries. (5)
