M.E. Fourth Semester (Civil (Environmental Engineering)) (CBS)

13402 : Industrial Waste Water Treatment : 4 SCEE 1

P. Pages : 2 | AU - 3218

Time : Three Hours | Max. Marks : 80

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Notes :
1. Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer-book must be used for Section A & B in Pharmacy and Cosmetic Tech.
2. All question carry marks as indicated.
3. Answer **three** question from Section A and **three** question from Section B.
4. Due credit will be given to neatness and adequate dimensions.
5. Assume suitable data wherever necessary.
6. Diagrams and Chemical equations should be given wherever necessary.
7. Illustrate your answer necessary with the help of neat sketches.
8. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1.	a)	Discuss the variation in quality and quantity of industrial waste water based on different parameters.	7
	b)	Explain in details the social aspect of industrial waste.	7
2.	a)	State about the discharge standards for treated waste water into municipal sewers and natural water courses.	7
	b)	Discuss the significant parameters for land application of waste water.	6
3.	a)	Explain briefly the various methods of sampling procedure and their suitability.	7
	b)	How is the reuse of treated waste water is classified? Explain each in details.	6
4.	a)	Write a short note on good housekeeping, equalization and precipitation and why it is necessary?	7
	b)	Explain about the theories of waste volume and waste strength reduction.	6
5.	a)	Discuss in details cleaner technologies of production for waste minimization.	7
	b)	What is neutralization? Why it is necessary? How it is carried out?	6

SECTION - B

6.	a)	Write in details operational problem in an Industrial effluent treatment plant. Explain remedies for it?	7
	b)	How do you measure the strength of colour in waste water and explain the methods for the removal of colour from waste water.	7

7.	a)	Explain physico-chemical methods for removal of inorganic substances from industrial waste.	7
	b)	Give a brief account of modification to conventional Activated sludge process.	6
8.	a)	Explain in details the manufacturing process, sources of waste and general characteristics of water from Textile Industry.	7
	b)	Explain, why extended aeration is considered suitable for dairy waste treatment? Suggest suitable option if any?	6
9.	a)	Explain in brief how the oil and grease can be removed from waste water?	7
	b)	Discuss the application of floatation in Industrial waste treatment. How efficiency can be increased?	6
10.	a)	Explain with the help of flow diagram the treatment options for the waste generated from electroplating Industry.	6
	b)	Comments on pollution control aspects in pulp and paper industry.	7

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