

This question paper contains 3 printed pages.

3167

Your Roll No.

MEC

J

Paper— CE.653

INDUSTRIAL WASTE WATER TREATMENT

Time : 3 hours

Maximum Marks : 100

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt any five questions.

1. (a) State briefly the various methods of recovery and recycling used in Kraft mills. Which pollutants from Pulp and Paper mills are difficult to treat? What is the essential difference between the effluents from small and large Pulp and Paper mills?
 - (i) Waste water recovery for reuse/recycling
 - (ii) Volume and strength reduction in Industrial Waste Management. 10+10

2. (a) What are the various sources of pollution in an integrated cotton textile mill? Give a plan for management of pollution in an integrated cotton textile mill.

P. T. O.

- (b) What are important processes/operations in woollen and synthetic textile mills? Give a plan for the control of pollution in these industries.

10+10

3. (a) Give typical characteristics of effluents from Brewery, Winery and Distillery. What are the different methods available for the management of these wastes?

- (b) What do you understand by equalisation, neutralisation and proportioning? Give examples from industry.

10+10

4. (a) Comment on the centralised waste treatment as an effective alternative to onsite industrial waste water treatment. Discuss the planning and management aspects of such a system for small and medium scale industrial estates.

- (b) Why are solvents, grease, cyanide, phenol and sulphates considered undesirable for discharge into public sewers? Explain.

10+10

5. (a) What are the main pollutants from vegetable/chrome tanning process? Suggest a scheme of pollution abatement for tanneries in India.

- (b) What are the characteristics of waste produced from a large size dairy manufacturing market milk, butter and other products? What are the

environmental effects if dairy waste is discharged to public fountains? In the light of modern developments what are your recommendations for managing waste water from Mother Dairy plant in East Delhi? 10+10

6. (a) What are the various polluting effluents generated by integrated steel plants? Give a plan for pollution control in integrated steel plants.

(b) Give a flow diagram of operations/processes in a urea manufacturing plant. Suggest effluent treatment systems for fertiliser plant manufacturing urea and phosphatic fertiliser. 10+10

7. Write short notes on:

(i) Operations in slaughter-house and pollution control

(ii) Sources of waste water and pollution control in vegetable oil and vanaspati industry. 20

8. Write long notes on any *two* of the following:

(i) Waste Management in Coffee Processing.

(ii) Environmental Management in a Paint Industry.

(iii) Waste Management in 'Aspartane' Manufacturing Plant. 20