

[01-4108]

IV/IV B.E. DEGREE EXAMINATION.

First Semester

Civil Engineering

ENVIRONMENTAL ENGINEERING -II

(Common with Civil Environmental Engineering)

(Effective from the admitted batch of 2006-2007)

Time : Three hours

Maximum : 70 marks

Question No. 1 is compulsory.

Answer any FOUR from the remaining.

All questions carry equal marks.

1. (a) State the merits of combined system of sewerage.
- (b) State what factors mainly affect the quantity of storm sewage.
- (c) In which case D.O is more-seawater or freshwater? Justify your answer.
- (d) Differentiate between Equalization and Neutralization citing examples for each.

- (e) What is F/M? Mention the F/M ratio to be maintained in extended type of activated sludge process.
- (f) Write about Anaerobic Microbiology.
2. (a) Define BOD. Derive an expression for first stage BOD exertion.
- (b) If the 5 day BOD of a sample is 276 mg/l and ultimate BOD at the temperature is 380 mg/l, at what rate the waste is oxidized?
3. (a) With the help of a neat sketch, describe pneumatic ejectors.
- (b) Write a note on inverted Siphon.
4. (a) Explain Preliminary, Primary and Secondary treatment
- (b) Why it is necessary to provide the Grit chamber in sewage treatment plant? Give a longitudinal section of a Grit chamber.
5. Along with a neat sketch, explain the process of operation of Trickling filter, design criteria and troubles associated.

6. (a) What do you understand by return sludge and sludge Volume Index?
- (b) Write a note on
- (i) Step Aeration and
 - (ii) Tapered Aeration in activated sludge process
7. (a) With a neat sketch explain the working principle of stabilization ponds.
- (b) Why it is necessary to treat the sewage sludge? What is the process of anaerobic sludge digestion?
8. (a) Explain the principle in attached growth Anaerobic process.
- (b) Discuss the advantages and disadvantages of Anaerobic Treatment.
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