

Roll No.UITians

Total No. of Questions : 6]

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**B.E. VIth Semester (CGPA)
Examination, 2017**

EF-339

CIVIL ENGG.

(Environmental Engg.-II)

Paper : CE-604

Time : 3 Hours]

[Maximum Marks : 60

Note :- Attempt all questions.

1. Write short notes on :

- (i) BOD
- (ii) COD
- (iii) THOD
- (iv) TOC
- (v) TOD

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(1)

Turn Over

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2. What is Sewage Farming ? What are its advantages over the method of sewage disposal by dilution ? What precautions must be taken in its operation to prevent health hazards ?

Or

What do you understand by 'Sewer Appurtenance' ? Enumerate various appurtenance commonly used. Explain any *two* in detail.

3. For a small town, having projected population of 30,000 residing over an area of 20 hectares. Find the design discharge for the combined sewer for the following data :

Rate of water supply = 150 litres/day/per capita

Run off co-efficient = 0.40

Time of concentration = 30 minutes.

Or

What is Sedimentation ? How it can improve with coagulants ? Describe the functioning of a rectangular sedimentation tank with neat sketch.

4. What is trickling filter ? Explain with neat sketch. Compare the conventional and high rate trickling filter. Also stated the key parameters which considered in design of trickling filter.

Or

Given a waste water containing 300 mg/l of ketone of Chemical formula $\text{CH}_3\text{COC}_2\text{H}_5$,

- (i) Calculate the COD
- (ii) Assume a K value (base 10) of 0.1/day

Calculate the ultimate BOD and the 5 day BOD of the waste.

5. What do you understand by recirculation ? What are the advantages of recirculation and explain the process of purification of sewage by trickling filters ?

Or

What is meant by activated sludge ? Describe with sketches the treatment of sewage by activated sludge process. Also mention the merits and demerits of activated sludge process method.

6. Write short notes on :

- (i) Skimming tank
- (ii) Grit chamber
- (iii) Adsorption by activated sludge
- (iv) Diatomaceous earth filter.

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Or

What is meant by digestion of sewage sludge ? Describe the functioning of a digesting tank with sketch. Also mention the term 'Sludge Digestion Index'.