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Roll No.

V SEMESTER

B.Tech.

Sept-2019

MID SEMESTER EXAMINATION

PAPER CODE: EN-301

Wastewater Engineering: Design and Applications

Max. Marks: 20

Time: 1:30 Hours

Note : Answer all questions
All questions carry equal marks.
Assume suitable data required, if any.

- Q1. Discuss the need and financing of the sewerage projects. Also discuss design and planning of a sewerage system.
- Q2. (a) What is the design period Explain the design periods for different components of a sewage scheme.
(b) Differentiate between combined and separate sewerage systems of sewage with their relative merits and demerits.
- Q3. (a) Explain self purification of streams and indicate how sunlight helps in such purification.
(b) The 5 day 30°C BOD of sewage is 110mg/l. Calculate its 5 days 20°C BOD. Assume the deoxygenation constant at 20°C, K_{20} as 0.1.
- Q4. Design a sewer to serve a population of 36000. The daily water supply to the city is 135 lpcd and channel bottom slope is 1:625. Sewer is designed to carry 4 times the average discharge. What will be the velocity generated if N is constant and is equal to 0.01.
Assume depth of flow $3/4^{\text{th}}$ full
- Q5 Write a short note on any two
(a) Egg shaped sewers
(b) Self-cleansing velocity
(c) Functions of Manholes and drop holes
(d) BOD and COD