

Gauhati University B.Tech 6th Semester examination 2022

Course Code: CE 602

Course Title: Environmental Engineering-II.

Time: 3 hours

Total mark: 100



Note: Answer any 05 questions

1. (a) Mention the significance of BOD and COD. 07
(b) Define the term catchment area and dry weather flow. 06
(c) Differentiate between unit operation and unit process. 07
2. What are the various wastewater characteristics? Describe each of them in detail. (6+14)
3. (a) What is activated sludge process? 04
(b) Name various laboratory tests to check the properties of wastewater. 04
(c) Write the differences between conservancy system and water carriage system. 12
4. (a) Describe the Nitrogen Cycle with a neat schematic diagram. 06
(b) The BOD of sewage incubated for 1 day at 30° C has been found to be 150ppm, what will be the 5 day BOD at 20°C. Assume $K=0.12$ (base 10) at 20°C. 14
5. (a) A sewer has a catchment area of 70 hectares. Estimate the storm water flow corresponding to a rainfall of 4 cm during a time of concentration of 0.5 hours. Assuming the impervious area is equal to 50% of the total catchment area. Use Lloyd Davis formula. 14
(b) What are the various types of sewerage systems? Explain briefly. 06
6. (a) Determine the ultimate BOD for a sewage having 5 day BOD at 20° C as 200 ppm. Assume the de-oxygenation constant as 0.12 per day. Also determine the 2 day BOD for the Sewage. 14
(b) Describe the 1st stage BOD curve with the help of a neat schematic diagram. 06

THE END