B.E. / Civil / Sem-VIII / CBCGS / R-19 / 'C' Scheme / Sub:- IWT / 3.H.-2024
Date:- 04/12/2024

Time: 3hours **Marks: 80**

QP. Code:- 10066481

1. Question.No.1 is compulsory.
2. Answer any three questions out of remaining five questions.
3. Assume suitable data wherever required
4. Figures to the right indicate full marks.

Q.1 Attempt any four **(20)**

1) Explain any two methods of volume reduction
2) What is Environment Audit?
3) A waste water effluent of 700 lit/s with DO = 1.0 mg/lit enters a river where the flow is 50 m3/sec with DO = 8.5 mg/lit. Determine the DO after mixing of waste water with the river water.
4) Explain with sketch offline Equalisation.
5) Explain stream and effluent standards.

Q.2a) Explain with neat flow diagram working of CETP. State its advantages and disadvantages **(10)**

b) Explain in detail manufacturing process for sugar industry with neat sketch. **(10)**

Q.3 a) What are characteristics of distillery waste? Explain with suitable flow diagram treatment of distillery wastewater. **(10)**

b) Calculate 2 day 37^0C BOD of sewage sample whose 5 day 20^0C BOD is 180 mg/lit. Assume $K_D = 0.1$ at 20^0C. **(10)**

Q.4 a) A city discharges 100 cumecs of sewage water into a river, which is fully saturated with oxygen and flowing at the rate of 1500 cumecs with a velocity of 0.1 m/sec. The 5 day BOD of sewage at the given temperature is 280 mg/lit. Find when and where the critical DO deficit will occur and what is its amount. Assume coefficient of purification of stream (f) as 4.0, and $K_D = 0.1$. **(10)**

b) Explain the manufacturing process for dairy industry with flow-sheet. **(10)**

Q.5 a) Explain in detail different methods of neutralisation of Acidic and Alkaline Waste water. **(10)**

b) Explain EIA in detail **(10)**

Q.6 Write short notes on **any four** **(20)**

A) UASB
B) Rotating Biological Contactor
C) Soil Biotechnology
D) Oxygen Sag curve
E) Sream sampling

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