



REGISTRATION NUMBER

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## SRINIX COLLEGE OF ENGINEERING

1<sup>st</sup> INTERNAL EXAMINATION-2020-21

Subject-**WWWE**

Semester-5<sup>TH</sup>

Branch-**CIVIL**

Full Mark-**60**

Time-**2 Hr**

**ANSWER ANY TEN QUESTIONS (PART-A)**

**[2X10]**

- 1) (a) The discharge per unit plan area of a sedimentation tank, is generally called \_\_\_\_\_
- (b) The process of passing water through beds of granular materials, is called \_\_\_\_\_
- (c) Mathemoglobinemia or blue disease is caused due to \_\_\_\_\_
- (d) 5 days biochemical oxygen demand (BOD<sub>5</sub>) is taken at a temperature of \_\_\_\_\_.
- (e) When the reduced level of the water source is higher than the reduced level of the consumers place, water is supplied by
  - a) Pumping system
  - b) Gravitational system
  - c) Both a and b
- (f) Gravity conduits are generally in the form of
  - a) Canals
  - b) Flumes
  - c) Aqueduct
  - d) All of the above
- (g) If the chosen diameter of a pipe is less than the economical diameter
  - a) cost of pipe will be less
  - b) head loss will be high
  - c) cost of pumping will be more than saving
  - d) all of the above
- (h) Name the different layouts of distribution networks.
- (i) What do you mean by self-cleansing velocity?
- (j) In meandering rivers, the intake should not be located on sharp curves, why?

**ANSWER ANY FOUR QUESTIONS (PART-B)**

**[5×4]**

1. List the factors that govern the selection of a site for intake structure.
2. Discuss the role of wash water through in slow sand filter with detailed figure.
3. A town discharges 40 m<sup>3</sup>/sec of secondary treated sewage into a stream having a rate of flow 1000 m<sup>3</sup>/sec. The DO content of sewage is 1mg/l and DO in upstream side of river is 8.5 mg/l. Find the DO of mix.

4. Mention any three methods of softening process of water. Describe zeolite process of softening of water in detail
5. Differentiate between Dry intake tower and Wet intake tower.

**ANSWER ANY TWO QUESTION (PART-C)[10×2]**

1. A town having a population of 30,000 persons is producing the following sewages

- a) Domestic sewage @ 120 l.p.c.d. having 200 mg/l of BOD
- b) Industrial sewage @ 3,00,000 l.p.d. having 800 mg/l of BOD

Design high rate trickling filter for treating the above sewage. Assuming that the primary sedimentation removes 35% of BOD. Allow an organic loading of 10,000 kg/ha.m/day. The recirculation ratio is 1; and the surface loading should not exceed 170 Ml/ha/day. Also determine the efficiency of the filter.

2. Explain the physical characteristics of raw water.
3. Explain the working principle of rapid sand gravity filter.