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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(CE) (2012 to 2017) (Sem.-6)
ENVIRONMENTAL ENGINEERING-II
Subject Code : BTCE-606
M.Code : 71087

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Answer briefly :**

- a. What is combined system?
- b. Define Time of concentration.
- c. What is anaerobic decomposition?
- d. Mention two difference between domestic sewage and industrial sewage composition.
- e. What is BOD kinetics?
- f. What is sludge stabilization?
- g. Define Total Organic Carbon.
- h. What are the various systems of plumbing in a building?
- i. Mentions the locations where you need to provide inspection chamber.
- j. What is macrophyte pond?

SECTION-B

2. What are the requirements of sewage pumping stations?
3. A town having population of 40,000 disposes sewage by land treatment. It gets a per capita assured water supply @ 130 litres/day. Assuming that the land used for sewage disposal can absorb 80m^3 of sewage per hectare per day, determine the land area required.
4. Discuss the trickling filter unit details and how does it work.
5. Discuss nutrient removal and polishing of waste water.
6. Draw a treatment plant for a municipal waste water discharging to a river. Discuss the importance of each unit.

SECTION-C

7. Write short notes on :
 - a. Drop manhole;
 - b. Street inlets
8. A city discharges $125\text{ m}^3/\text{sec}$ of sewage into a perennial river which is fully saturated with oxygen and flows at a minimum rate of $1600\text{ m}^3/\text{sec}$ with a minimum velocity of 0.12 m/sec . If 5-day BOD of the sewage is 300mg/l , find out where the critical DO will occur in the river. Assume, the coefficient for purification of river is 4.0, the coefficient of DO is 0.11, and the ultimate BOD is 125% of the 5-day BOD of the mixture of sewage and river water.
9. Design a septic tank for a small colony of 150 persons provided with an assured water supply from the municipal authority @ 120 litres/person/day. Assume any suitable data if required.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.