# H.T.No.

# III B. Tech II Semester Regular Examinations, April 2017 ENVIRONMENTAL ENGINEERING (Civil Engineering)

## Time: 3 Hours

Code No: CE1527

**Note:** All Questions from **PART-A** are to be answered at one place. Answer any **FOUR** questions from **PART-B.** All Questions carry equal Marks.

### PART-A

- 1. Mention test methods that are available to estimate bacterial quality of water.
- 2. State any one method used to calculate total storage capacity of a distribution reservoir.
- 3. Match the following: (i) Aerator, (ii) Rapid Sand Filter, (iii) Sedimentation Tank, (iv) Slow Sand Filter and Impurities removed by them

(a) Excess of  $CO_2$  and  $H_2S$ , (b) Settleable and Colloidal Matter, (c) Suspended Matter, (d) Bacteriological Matter.

- 4. Draw a neat sketch of the Oxygen Sag Curve for depletion of Oxygen at a disposal point and it's downstream in a flowing river.
- 5. What is the purpose of using velocity control device in a Grit Chamber?
- 6. How can an incinerator help reduce pollution?

#### PART-B

#### 4 × 12 = 48M

1. Explain any four methods used to estimate the discharge of water required to meet the Fire Demand in a city. Do explain the terms and mention the units.

(12M)

- 2. A Water Treatment plant is to process 19,000  $m^3/d$ . Determine the dimensions of a settling basin for
  - (a) a long-rectangular unit
  - (b) a circular unit.

Check detention times, and Horizontal velocities. State your assumptions clearly where relevant. (12M)

#### GEC-R14

Max. Marks: 60

 $6 \times 2 = 12M$ 

- 3. Describe with a neat sketch the working of a Pressure Filter. What are the relative advantages and disadvantages of this type over those of the gravity filters? (12M)
- 4. Design a septic tank for a hostel having 250 students. Illustrate the design with neat sketch. State your assumptions clearly. Always write the appropriate units. (12M)
- 5. Compare and contrast a standard rate trickling filter with a high rate trickling filter. (12M)
- 6. Distinguish between the following
  a) Down-cycling and Recycling of waste (6M)
  b) Reusing and Recovery of waste, (6M)
  taking specific examples from your daily life.

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