



SE-7343

B. E. III (Sem. VI) Civil Examination

April / May - 2011

Environmental Engineering-II

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दशांशिक निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.	Seat No.:
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. 3 (Sem. 6) (Civil)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Environmental Engineering-2"/>	<input type="text"/>
Subject Code No. : <input type="text" value="7"/> <input type="text" value="3"/> <input type="text" value="4"/> <input type="text" value="3"/>	Section No. (1, 2,.....) : <input type="text" value="1"/> <input type="text" value="2"/>
Student's Signature	

- (2) Assume missing data suitably if necessary.  
(3) Draw sketch whenever necessary.  
(4) Figures to the right indicate full marks of the question.

### SECTION - I

- 1 (a) Explain the following terms : any five 10  
(1) Dewatering  
(2) Flowing through period  
(3) Surface loading rate  
(4) MLSS  
(5) Facultative bacteria  
(6) Coagulant  
(b) Design a rectangular sedimentation tank for a town population of 50,000 with water supply of 200 LPCD. 8
- 2 (a) Discuss types of Racks and Screen in detail. 7

OR

- (a) Prove that the area and the overflow rates, rather than detention period govern the design of an ideal settling tank.  
(b) What do you understand by secondary treatment (biological treatment) of waste water ? Enumerate various treatment techniques used for biological treatment and explain its theory. 8

OR

- (b) Explain in brief various methods used for aeration in the activated sludge process. 8
- 3 (a) Design a circular trickling filter unit for treatment of 4 million liters of sewage per day, having a 5 day BOD of 160 mg/l. 7
- (b) Write short notes on any **two** : 10
- (1) Oxidation ditch
  - (2) Rotating biological contractor
  - (3) Sludge treatment process
  - (4) Skimming tank.

## SECTION - II

- 4 (a) Name the various methods of disposal of refuse and explain any two in details. 8
- (b) Discuss the sources of air pollution and its effect on human health. 7
- 5 (a) Name the different systems of plumbing and explain any two. 15
- (b) Discuss the stages of biological action constituting sludge digestion. 7

## OR

- (b) Define ultimate B.O.D. Calculate 5 day 20<sup>0</sup>C BOD if the B.O.D. of a sewage incubated for one day at 30<sup>0</sup>C. has been found to be 110 mg/l. Assume  $k_1=0.1$  at 20<sup>0</sup>C. 7
- 6 Attempt any **three** : 7×3=21
- (i) Write short note on testing of sewers.
  - (ii) Explain the function of flushing manhole and street inlet.
  - (iii) Compare dilution method and land disposal method for sewage disposal.
  - (iv) Functions of traps in sanitary plumbing system and explain gully trap.
  - (v) Compare first stage BOD and second stage BOD. Explain any of dilution of sample is done with aerated water for finding B.O.D.