

**B.Tech. CIVIL ENGINEERING (BTCLEVI)****Term-End Examination****June, 2019****BICE-018 : ENVIRONMENTAL ENGINEERING-II***Time : 3 hours**Maximum Marks : 70*

*Note : Attempt any seven questions. All questions carry equal marks.*

1. Compare between separate and combined system of sewers. Mention their respective merits and demerits. 10
2. Explain attached growth system and suspended growth system giving their applications in brief. 10
3. (a) Explain various methods of testing of sewers. 4  
(b) Explain the process of Anaerobic Sludge Digestion. 6
4. (a) Describe briefly about various physical and chemical processes affecting the natural purification of rivers. 6  
(b) Explain Do Sag curve. 4
5. Discuss in brief various treatment processes adopted for treating industrial waste water. 10

6. What do you mean by sludge thickening? Describe various methods of sludge thickening. 10
7. What do you understand by sedimentation of waste water? Describe in brief various types of settling. 10
8. (a) What do you understand by 'sewer appurtenances'? Enumerate various appurtenances commonly used. 5  
(b) Describe with the help of a neat sketch the components of a man hole. 5
9. (a) What are the various ways to reuse treated waste water? Discuss briefly. 5  
(b) Write the advantages and disadvantages of activated sludge process. 5
10. Write short notes on **any four** of the following :  
(a) Self cleansing velocity  $4 \times 2\frac{1}{2} = 10$   
(b) Coagulation  
(c) Inhoff Tank  
(d) UASB (Up flow Anaerobic Sludge Blanket)  
(e) Sewage Sickness
-