

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

December, 2017

00532

BICE-018 : ENVIRONMENTAL ENGINEERING – II

Time : 3 hours

Maximum Marks : 70

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

1. How do we characterize wastewater ? Write a detailed note on physical, chemical and biological characteristics of municipal wastewater. 14

2. (a) Why do we need effluent discharge standards ? Write a brief note on the effluent discharge standards applicable to wastewater discharge from a municipality. 7
(b) Discuss the role played by pumping stations in a sewerage scheme. 7

3. (a) Differentiate between the natural purification and engineered treatment schemes for wastewater treatment. 7
(b) Discuss the physical, chemical and biochemical processes involved in water purification in natural systems. 7

4. (a) Define the attached growth and suspended growth systems used in wastewater treatment. 7
- (b) What are the different modifications of conventional ASP ? Explain with the help of neat sketches. 7
5. (a) What are Septic tanks and Imhoff tanks ? Explain briefly. 7
- (b) Discuss the various methods used for sludge thickening. 7
6. (a) How do we dispose off the sludge obtained from primary and secondary treatment units of a wastewater treatment plant ? 7
- (b) Write a short note on the removal of nitrogen and phosphorus from wastewater. 7
7. Write short notes on the following : $4 \times 3 \frac{1}{2} = 14$
- (a) Sedimentation Tanks
- (b) DO Sag Curve
- (c) UASB
- (d) Site Selection for Sewage Treatment Plant
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