

B.Tech. CIVIL ENGINEERING (BTCLEVI)

00483

Term-End Examination

December, 2018

**BICEE-024 : ADVANCED ENVIRONMENTAL
ENGINEERING**

Time : 3 hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks. Assume suitable data, if missing. Use of scientific calculator is allowed.

1. (a) Explain the operation of microfilter with a neat sketch. 7
- (b) Describe the role of activated charcoal for removal of colour. 7
2. (a) Write about modern methods of disinfection, especially chlorine disinfection. 10
- (b) What are the zones of pollution in a stream ? 4
3. (a) What are the various types of water bodies where disposal of wastewater can be done ? Write if any conditions are required for the same. 7

- (b) BOD_5 of a wastewater has been measured as 500 mg/L. If the rate constant $K' = 0.26/\text{day}$ (base e) what is the ultimate BOD of wastewater ? What proportion of BOD_4 would remain unoxidised after 20 days ? 7
4. (a) Give the significant features of a Biofiltration unit. 7
- (b) What are the various tertiary treatment methods for process of effluent ? Describe any one method of treatment. 7
5. (a) What are harmful effects of sulphur dioxide on human beings ? 7
- (b) How is nitrogen dioxide contamination controlled in ambient air ? 7
6. (a) Explain the procedure of measurement of sound to estimate noise pollution. 7
- (b) What are the various instruments used to measure noise ? Explain in detail. 7

7. (a) What are the harmful effects of carbon monoxide? 7
- (b) Using the following data find out DO at the end of 1 day : 7

	River	Wastewater
Flow (m ³ /s)	25	2
DO (mg/L)	9.1	0
5 day BOD (mg/L)	2	200

Deoxygenation constant 0.1 is per day and reoxygenation constant is 0.3 per day. Take Saturation DO as 9.10 mg/L.
