

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2016

00786

**BICEE-024 : ADVANCED ENVIRONMENTAL
ENGINEERING**

Time : 3 hours

Maximum Marks : 70

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

1. (a) Explain the functioning of multimedia and microfilters. 6
- (b) Explain the various methods to remove taste and colour from drinking water. 8
2. (a) Explain the Streeter-Phelps method to calculate the minimum dissolved oxygen content in the receiving water body after mixing with the polluted stream. 5
- (b) What is the ratio of COD/BOD ? Explain. 4
- (c) Deoxygenation reaction rate constant is dependent on temperature. Explain. 5

3. (a) What is the effect on the water quality when a polluted stream is added ? 6
- (b) Two streams of 5,000 m³/day and 10,000 m³/day are generated from two locations. BOD₅ of stream 1 is 250 mg/L and that of stream 2 is 20 mg/L. What is the BOD₅ of mixed stream ?
- The above mixed stream is now disposed in a river having BOD₅ of 2 mg/L and a flow of 250 L/s. What is the BOD₅ of the river immediately after mixing ? 8
4. (a) What is an Accelo-filter ? How does it differ from Aero-filter ? Discuss a typical flowchart showing the integration of these filters in the wastewater treatment plant. 8
- (b) Discuss the working of a catalytic converter. 6
5. (a) What are the engineering measures to control air pollution ? Describe in detail. 8
- (b) What are the factors influencing the action of disinfectants ? Explain residual-free chlorine. 6

6. (a) Differentiate between threshold of audibility and threshold of pain. 3
- (b) Explain the role of lead and high transmission loss ceilings in effective control of noise. 7
- (c) Draw the decibel scale to show various sound pressure levels. 4
7. (a) What are the health implications of carbon monoxide pollution? 7
- (b) Describe the electrostatic precipitator in detail and also mention its applications. 7
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