BICEE-024

B.Tech. CIVIL ENGINEERING (BTCLEVI)
Term-End Examination
00083 **December, 2016**

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. Discuss the modern methods of disinfection by chlorine, ozone and ultra-violet light. *14*

2. (a) Describe the various physical and chemical processes of self-purification of rivers. *8*

   (b) Explain the first and second stages of BOD. *6*

3. (a) Describe the construction and operation of trickling filters. *7*

   (b) Explain the concept of extended aeration with oxidation ditches as an example. *7*

4. (a) Explain how a BOD test is conducted to estimate the five-day BOD of a sample. 5

   (b) Define BOD_5 and Ultimate BOD. 3

   (c) The 5-day, 30°C BOD of a sewage sample is 110 mg/L. Calculate its 5-day, 20°C BOD. Assume the deoxygenation constant at 20°C is 0·1/day. 6

5. (a) Write a short note on the tertiary treatment of waste water. 7

   (b) Explain the health effects of air pollution. 7

6. (a) Noise characteristics are same as sound characteristics. Explain. 7

   (b) Explain loudness by Fletcher and Munson curve. 7

7. (a) Describe the construction and operation of a tube settler. 5

   (b) Describe the various methods to control SO_x in flue gas systems. 9

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