BICE-018

B.Tech. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

ᗜᗜᎦᎭᎦ   **December, 2016**

BICE-018 : ENVIRONMENTAL ENGINEERING – II

Time : 3 hours   *Maximum Marks : 70*

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

1. Differentiate between trickling filter and activated sludge process.   *14*

2. Describe the various methods of sludge processing and disposal.   *14*

3. Explain, with the help of a neat sketch, the design and operation of septic tanks.   *14*

4. Discuss the natural purification processes for natural water bodies.   *14*

5. A combined sewer of a circular section is to be laid to serve a particular area. Calculate the size of this sewer from the following data : **14**

Area served : 120 hectares

Population : 1,00,000

Maximum permissible flow velocity : 3 m/sec

Time of entry for storm water : 10 minutes

Time of flow in channel : 20 minutes

Per capita water supply : 250 l/d

Coefficient of run-off for the area : 0·45

Hourly, maximum rainfall for the area at the design frequency : 5 cm

6. (a) Discuss the various methods of sewer testing. **7**

(b) Describe the various biological water quality parameters. **7**

7. Write short notes on any *four* of the following : $4 \times 3\frac{1}{2} = 14$

(a) Combined Sewer System

(b) UASB (Upflow Anaerobic Sludge Blanket)

(c) Stabilization Ponds

(d) Advanced Waste Water Treatment

(e) Imhoff Tank