

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER- V(OLD) EXAMINATION – SUMMER 2019****Subject Code:150603****Date:31/05/2019****Subject Name:Environmental Engineering****Time:02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) How water demand for a city is calculated? Differentiate surface water and ground water sources as per their quality. **07**
(b) Classify microbes? Describe with sketch main four phases of the microbial growth. **07**
- Q.2** (a) Give the standard definition of BOD and derive the equation for first stage BOD. **07**
(b) What is self-purification of river water bodies? Explain its different processes. **07**
- OR**
- (b) Describe re-oxygenation and de-oxygenation processes and explain oxygen sag curve schematically. **07**
- Q.3** (a) Draw layout of house drainage system and discuss the salient features of its components. **07**
(b) Differentiate (i) one pipe and two pipe system of plumbing (ii) Nahani trap and Gully trap **07**
- OR**
- Q.3** (a) Define (i) Rubbish (ii) Garbage (iii) Soot (iv) Aerosol (v) Sullage (vi) COD (vii) soil pipe (viii) water seal **07**
(b) Describe different methods of solid waste disposal and compare them **07**
- Q.4** (a) Discuss the chemical characteristics of solid waste and calculate 5 day BOD at 20°C if 3 day BOD at 30°C is 110 mg/L and K_D at 20°C is 0.1 **07**
(b) Explain different methods of solid waste collection and conveyance used in India **07**
- OR**
- Q.4** (a) Enumerate different physical, chemical and biological characteristics of water and discuss any one in detail. **07**
(b) What is dB? Discuss the effects of noise pollution on human beings and their remedial measures **07**
- Q.5** (a) Describe the effect of particulate matter and carbon monoxide as air pollutants on humans' health. **07**
(b) Schematically, describe the functioning wet scrubber and bag house as air pollution control device. **07**
- OR**
- Q.5** (a) What are primary and secondary air pollutants? Discuss their effects on humans **07**
(b) What is EIA? Discuss the methodologies of conduction of EIA **07**
