

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2022****Subject Code:2150603****Date:13-01-2023****Subject Name:Environmental Engineering****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

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| Q.1 (a) State the sanitary significance of pH of water and wastewater. | 03 |
| (b) Find BOD _(5,20) of a wastewater sample, if BOD _(3,27) of the sample is 200 mg/lit. Take k _D value at 20° C as 0.1 day ⁻¹ | 04 |
| (c) Enlist and explain different physical quality parameter of wastewater. | 07 |
| Q.2 (a) Differentiate between BOD and COD. | 03 |
| (b) Justify the statement “Degree of treatment depends upon the method of disposal”. | 04 |
| (c) Explain the role of microbes in Environment. | 07 |
| OR | |
| (c) Write a short note on water borne diseases. | 07 |
| Q.3 (a) Enlist different physical and chemical characteristics of water. | 03 |
| (b) Write a short note on DO sag curve. | 04 |
| (c) Enlist different factors favouring dilution as the method of disposal of sewage. | 07 |
| OR | |
| Q.3 (a) Define 1. Sewage 2. Sullage 3. Manhole | 03 |
| (b) Enlist the principles of a house drainage system. | 04 |
| (c) Explain different types of water demand which has to be considered while designing the water supply scheme of a city. | 07 |
| Q.4 (a) Give a typical composition of a municipal solid waste. | 03 |
| (b) Explain floor trap and gully trap with neat sketch. | 04 |
| (c) Find the forecasted population of the city for the year 2031 and 2041 using the data given below. Use any three methods of forecasting. | 07 |

Year	Population
1981	14000
1991	24000
2001	39000
2011	50000

- OR**
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| Q.4 (a) Explain different sources of air pollution. | 03 |
| (b) Explain the effects of noise pollution on human beings. | 04 |
| (c) Explain landfill method used for disposal of solid waste with its advantages and disadvantages. | 07 |

- Q.5** (a) Explain working of a gravitational settling chamber with a neat sketch **03**
(b) Explain the effect of carbon dioxide and oxides of nitrogen on human health **04**
(c) What is sewage sickness? How it can be controlled? **07**
- OR**
- Q.5** (a) What are the objectives of Environmental Protection Act **03**
(b) Explain in brief, how air pollution due to automobiles can be controlled **04**
(c) Explain the different control measures for noise pollution **07**
