



GIET UNIVERSITY, GUNUPUR – 765022

Ph.D. (Second Semester) Examinations, November – 2023

WPPECH2011 – Water Pollution and Treatment Techniques (Chemistry)

Time: 3 hrs

Maximum: 70 Marks

The figures in the right hand margin indicate marks.

Answer ANY FIVE Questions

(14 x 5 = 70 Marks)

	Marks
1.a. Discussion on different physical water quality parameters such as temperature, turbidity, colour, odour.	14
2.a. 0.1g of CaCO ₃ dissolved in 1liter distilled water. 50ml of SHW consumed 25ml of EDTA.100ml of water sample consumed 20ml of EDTA.100ml of boiled water consumed 15ml of EDTA. Calculate the Temporary, permanent and total hardness.	14
3.a. Explain in detail municipal waste water treatment.	7
b. Explain Reverse Osmosis and Ozonisation.	7
4.a. Explain the process of removal of suspended solids, dissolved solids.	14
5.a. What are the advantages of removal of dissolved ammonia, phosphorus, solids?	14
6.a. Write the objective of waste water treatment. What are the steps of waste water treatment?	7
b. Explain the Ion exchange process.	7
7 a. What are the different sources of water pollution?	14
8 a. Discussion on different water quality parameters such as pH, DO, conductivity, TS, TDS, TSS, hardness, alkalinity.	14

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