

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
IV B. Tech I Semester Advanced Supplementary Examinations March 2025
ENVIRONMENTAL ENGINEERING

(Open Elective)

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**
 All Questions Carry Equal Marks

UNIT-I

1. a) The population of a locality as obtained from census report is as follows: [7M]

Estimate the population of the locality in the years 2001, 2011 and 2021 by

Geometrical increase method.

Census Year	1881	1891	1901	1911	1921	1931	1941	1951
Population	8000	12000	17000	22500	29000	37500	47000	57000

- b) Explain the factors affecting the design period. [7M]

(OR)

2. a) Explain water borne diseases with control measures. [7M]
 b) Explain per capita demand and factors that affect per capita demand. [7M]

UNIT-II

3. a) Explain the surface sources of water. [7M]
 b) Explain the balancing storage capacity of reservoir by mass curve analysis. [7M]

(OR)

4. a) Discuss the different types of pipes. [7M]
 b) Explain in detail about the types of water bearing formations. [7M]

UNIT-III

5. a) Explain the importance of chemical and bacteriological analysis of water used for domestic purposes. [7M]

- b) Describe the WHO guidelines for drinking water. [7M]

(OR)

6. a) How does water quality criteria differs for industrial supplies from those for domestic municipal supplies. [7M]

- b) Describe in brief various tests conducted for physical examination of water. [7M]

UNIT-IV

7. a) Explain Disinfection methods. [7M]
b) Design a rectangular sedimentation tank to supply water for a population of 50,000 with an assured average supply of 135 lpcd. Detention time of the tank is 4 hours. Assume data needed suitably. [7M]

(OR)

8. a) Describe various types of coagulation commonly used in water treatment. [7M]
b) Distinguish between fluoridation and defluoridation? [7M]

UNIT-V

9. a) Explain laying and testing of pipe lines. [7M]
b) Discuss about Hardy Cross method in detail. [7M]

(OR)

10. a) Describe grid iron system with neat sketch? [7M]
b) Analyze the requirements of a good distribution system? [7M]
