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Code No: 156AX

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, August - 2022

ENVIRONMENTAL ENGINEERING
(Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) What is meant by hardness of water? Explain the EDTA method of testing of hardness of water.
b) Write short notes on waterborne diseases. [8+7]

2. The population of a locality as obtained from census report is as follows:

Census year	Population
1940	8000
1950	12000
1960	17000
1970	22500
1980	29000
1990	37500
2000	47000
2010	57000
2020	66500

Estimate the population of locality in the year 2040 and 2060 by Arithmetical and Geometrical methods. [15]

3. Explain the following along with neat sketches:

- a) Sedimentation
b) Gravity filters. [7+8]

4. Design a rapid sand filter unit for 4.5 MLD with all its principal components. [15]

5. Explain Self Purification in rivers. What is DO sag model? [15]

6. What are Sewer appurtenances? With neat sketch describe Manholes and their purpose. [15]

7. Explain Activated Sludge Process as an aerobic suspended growth process. [15]

8. Distinguish between primary air pollutants and secondary air pollutants. Discuss their control measures. [15]

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