

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech. III Year II Semester Regular Examinations April-2026

ENVIRONMENTAL ENGINEERING

(Civil Engineering)

Time: 3 Hours

Max. Marks: 70

PART-A

(Answer all the Questions 10 x 2 = 20 Marks)

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|-----|--|-----|----|----|
| a | Define surface water resources and give two examples. | CO1 | L1 | 2M |
| b | Mention any two waterborne diseases caused due to contaminated drinking water. | CO1 | L1 | 2M |
| c | What is disinfection of water? | CO2 | L2 | 2M |
| d | Define residual chlorine. | CO2 | L2 | 2M |
| 1 e | Define pressure reducing valve. | CO4 | L1 | 2M |
| f | What is leak detection? | CO4 | L1 | 2M |
| g | List any three materials used for sewer pipes. | CO5 | L1 | 2M |
| h | Define storm water runoff. | CO5 | L1 | 2M |
| i | Define activated sludge process (ASP). | CO6 | L1 | 2M |
| j | Draw a neat sketch of sewage treatment plant. | CO6 | L2 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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| 2 a | Explain in detail about surface water sources with examples. | CO1 | L2 | 5M |
| b | Differentiate between Inflation galleries and Springs. | CO1 | L2 | 5M |

OR

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| 3 | What is a pumping water supply scheme? Compare pumping and gravity water supply schemes and state the advantages of gravity water supply system. | CO1 | L2 | 10M |
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UNIT-II

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|-----|--|-----|----|----|
| 4 a | Discuss the importance of residue management and explain the methods used for its safe disposal. | CO2 | L3 | 5M |
| b | Explain the working principle of a pulsator clarifier with a neat sketch. | CO2 | L2 | 5M |

OR

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|-----|---|-----|----|----|
| 5 a | Describe the processes involved in the removal of iron and manganese from water with a neat sketch. | CO2 | L2 | 5M |
| b | Explain about the construction and maintenance aspects of water treatment plants. | CO2 | L2 | 5M |

UNIT-III

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|-----|--|-----|----|----|
| 6 a | Explain in detail about the maintenance of water distribution systems. | CO3 | L2 | 5M |
| b | Write a brief note on house service connections. | CO4 | L2 | 5M |

OR

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| 7 | Describe pipe fittings and valves used in water supply systems with neat sketches. | CO3 | L2 | 10M |
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UNIT-IV

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|-----|--|-----|----|----|
| 8 a | Explain in brief about various sewer appurtenances. | CO5 | L2 | 5M |
| b | Explain about operation and maintenance of sewerage systems. | CO5 | L2 | 5M |

OR

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| 9 | Estimate the storm water runoff for a catchment area of 40 hectares using the Rational Method, given rainfall intensity 60 mm/hr and runoff coefficient 0.6. Design the storm sewer diameter assuming velocity 1.2 m/s. | CO5 | L3 | 10M |
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UNIT-V

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| 10 a | Explain the Sequencing Batch Reactor (SBR) process. | CO6 | L2 | 5M |
| b | Discuss on waste stabilization ponds. | CO6 | L2 | 5M |

OR

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| 11 | Describe the working of trickling filters with neat sketch and its advantages and disadvantages | CO6 | L2 | 10M |
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