

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION)**

**CLASS: MTECH  
BRANCH: CIVIL ENGINEERING**

**SEMESTER : I  
SESSION : MO/2025**

**SUBJECT: CE580 URBAN ENVIRONMENTAL MANAGEMENT**

**TIME: 3 Hours**

**FULL MARKS: 50**

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|--|-------|----|
| Q.1(a) | Describe sustainable development? Discuss UN sustainable development goals?  | [5] 1 | 1  |
| Q.1(b) | Define urban environment? Briefly discuss urban developmental schemes in India?  | [5] 1 | 2  |
| Q.2(a) | What do you mean by carrying capacity and Discuss Ecosystem services?  | [5] 2 | 2  |
| Q.2(b) | What is the significance of urban ecology? Discuss urban climate problem with suitable illustration?   | [5] 2 | 2  |
| Q.3(a) | With a neat sketch discuss the working principle of submerged type intake well for river   | [5] 3 | 2  |
| Q.3(b) | Describe with a neat sketch rooftop rainwater harvesting structure?  | [5] 3 | 2  |
| Q.4(a) | What is solid waste? Describe the functional elements of solid waste management?   | [5] 3 | 1  |
| Q.4(b) | Discuss the solid waste management in any industry?  | [5] 3 | 3  |
| Q.5(a) | With a neat sketch Describe the Activated sludge process?  | [5] 3 | 2  |
| Q.5(b) | Differentiate between centralized and decentralized systems of sewage treatment? How can we increase the sustainability of sewage treatment systems? | [5] 1 | 3  |

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