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**DSCDM July - 2025**

**ASSIGNMENT BOOKLET**

**Diploma in Smart City Development and Management**

**(DSCDM)**

**Last date for submission:**

**30th April 2026**

**School of Engineering and Technology  
Indira Gandhi National Open University  
Maidan Garhi, New Delhi - 110068**

**Assignment -5**  
**(To be done after studying the course material)**

**Course Code: MIO – 005**  
**Course Title: Smart Cities: Safe Water, Sanitation and Sustainability**  
**Assignment Code: MIO – 005/TMA/2025 July**  
**Maximum Marks: 100**

**1. Attempt all questions. All questions carry equal marks.**

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<b>Q.1</b>	(a) What are the sources of clean water? Discuss the major issues in smart water supply.	5
	(b) What is the fourfold path to be followed to meet the demand for potable water supply?	5
<b>Q. 2</b>	(a) What are the principles to be followed in order to meet the water demand?	5
	(b) What are the steps to be taken to counter the threat conditions of water supply.	5
<b>Q. 3</b>	(a). What is water quality monitoring? What are the uses of water quality monitoring?	5
	(b). What is SCADA System? What are its uses in water management?	5
<b>Q. 4</b>	(a) What are the objectives of treating water? Discuss the various types of processes used in advanced water treatment.	5
	(b) What is settling velocity? What are the various types of settling in sedimentation tank?	5
<b>Q. 5</b>	(a) What is the purpose of planning and designing a sewage collection scheme?	5
	(b) Describe broad characteristics of the untreated sewage giving examples.	5
<b>Q. 6</b>	(a) Explain the steps involved in the planning and design of sewerage system.	5
	(b) List out various design considerations related to the setting up of a sewerage system.	5
<b>Q. 7</b>	(a) Explain the need of solid waste management. State the problems occurred due to improper solid waste management?	5

	(b) What are the different sources of the municipal solid waste generation? Explain the factors affecting the rate of municipal solid waste generation.	5
<b>Q. 8</b>	(a) What are the different types of solid waste collection systems? What are the necessary steps to be taken while establishing a waste storage facility?	5
	(b) What are the different chemical technologies in waste management? Explain the advanced treatment methods used in the treatment of solid waste.	5
<b>Q. 9</b>	(a) What are the stages for the selection of landfill site and write the steps involved in each stage?	5
	(b). What are the emerging value-added products? Discuss the different types of waste utilized in emerging value-added products.	5
<b>Q. 10</b>	(a) What are the different waste materials, which could be used as construction materials?	5
	(b) Describe bio-ethanol production process. What are the benefits of using bio-ethanol as a fuel?	5

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