

**DIPLOMA IN SMART CITY
DEVELOPMENT AND
MANAGEMENT (DSCDM)
Term-End Examination
December, 2025**

**MIO-005 : SMART CITIES : SAFE WATER,
SANITATION AND SUSTAINABILITY**

Time : 3 Hours

Maximum Marks : 70

Note : Attempt any **seven** questions. All questions carry equal marks.

1. (a) What are the uses of Smart Water Network (SWN) ? 5
- (b) What is the role of Artificial Intelligence (AI) in development of a smart city ? 5
2. (a) What are the principles to be followed in order to meet the water demand ? 5
- (b) What are the uses of water quality monitoring ? 5

3. (a) What is water auditing ? What are the components of water auditing ? 7
- (b) What are the minimum standards of residual chlorine and turbidity in drinking water for emergency response ? 3
4. (a) Differentiate between infiltration and exfiltration. 5
- (b) Discuss in brief about the variation in rate of flow of sewage. 5
5. (a) Explain the components that determine the physical characteristics of solid waste. 5
- (b) Explain different sources of municipal solid waste generation. 5
6. (a) What are different types of solid waste collection system ? 5
- (b) What are necessary steps to be taken while establishing a waste storage facility ? 5
7. (a) Define composting and discuss various factors that affect composting process. 7
- (b) What is the optimum range of pH to be maintained for the composting process ? 3

8. (a) What are objectives of Leachate Management ? 5
- (b) What are the conventional value-added products and what are the sources of these products ? 5
9. (a) What are the different waste materials which could be used as construction material ? 5
- (b) How is electricity produced from biomass waste ? 5
10. Write short note on any **four** of the following : $4 \times 2 \frac{1}{2} = 10$
- (a) Biopesticides
- (b) Enzymes
- (c) SCADA
- (d) Dry Weather Flow (DWF)
- (e) BOD

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