CSCDM July - 2025

ASSIGNMENT BOOKLET

Certificate in Smart City Development and Management

(CSCDM)

Last date for submission:

30th November 2025

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

Assignment -3
(To be done after studying the course material)

Course Code: MIO – 003
Course Title: SMART URBAN ENERGY AND SMART TRANSPORTATION SYSTEMS
Assignment Code: MIO – 003/TMA/2025 July
Maximum Marks: 100

Attempt all questions. All questions carry equal marks.

Q.1	Explain how the concept of 'smart energy' expands upon the idea of 'smart grids'. What additional sectors does it encompass, and why is this broader approach significant?	10
Q. 2	Analyze the potential economic and environmental impacts of implementing smart energy systems. How might these systems affect job markets, energy costs, and reliance on fossil fuels?	10
Q. 3	Evaluate the potential of smart energy systems to address climate change. How do these systems contribute to reducing greenhouse gas emissions and promoting sustainable energy use?	10
Q. 4	Analyze the potential implications of integrating smart urban energy systems with intelligent transportation systems. How might this integration contribute to the development of sustainable smart cities?	10
Q. 5	Analyze the potential impacts of implementing a smart traffic signal system on urban congestion. Consider both positive and negative consequences, and discuss how these impacts might vary in different city contexts.	10
Q. 6	Evaluate the role of big data analytics in improving public transportation systems. Provide specific examples of how data-driven decisions could enhance efficiency, reliability, and user experience.	10
Q. 7	Analyze the role of Artificial Intelligence and Machine Learning in the development of autonomous vehicles. How might these technologies evolve to improve vehicle performance and safety?	10
Q. 8	Analyze the potential societal impacts of widespread adoption of autonomous vehicles. Consider effects on employment, urban planning, and social interactions.	10
Q. 9	Discuss the benefits of the Depot Management System (DMS) in bus operations. How does this IoT-based system contribute to resource management and potentially increase ticket sales?	10
Q. 10	Analyze the Vision Zero approach adopted by Bogotá, Colombia. How does this strategy aim to eliminate traffic casualties, and what are its key components?	10