

CSCDM- 2026

ASSIGNMENT BOOKLET

**CERTIFICATE IN SMART CITY
DEVELOPMENT AND MANAGEMENT (CSCDM)**

Last date for submission:

**30th April 2026 for January 2026 Session
30th September 2026 for July 2026 Session**



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

Dear Student,

We advise you to go through your course material carefully and read all the section pertaining to assignments. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation which would consist of **one tutor-marked assignment** for each of MIO-001, MIO-002, MIO-003 and MIO-004 of these courses. You have to score a minimum of 40 marks out of 100 marks in each of the assignments. Submit your assignment response at **Programme Coordinator (CSCDM), Block-C, School of Engineering & Technology, Indira Gandhi National Open University, Maidan Garhi, New Delhi - 110068**

Instructions for Formatting Your Assignments

Before attempting the assignment, please read the following instructions carefully.

- 1) On top of the first page of your Tutor Marked Assignment (TMA) answer sheet, please write the details exactly in the following format:

ENROLMENT NO:

NAME:

ADDRESS:

.....

.....

COURSE CODE:

COURSE TITLE:

ASSIGNMENT CODE:

STUDY CENTRE: SOET, IGNOU Campus **DATE:**

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

- 2) Use only full-size writing paper (but not of very thin variety) for writing your answers.
- 3) Leave 4 cm margin on the left, top and bottom of your answer sheet.
- 4) Your answers should be precise.
- 5) While solving problems, clearly indicate the question number along with the part being solved. Be precise. Recheck your work before submitting it.

Answer sheets received after the due date shall not be accepted.

We strongly feel that you should retain a copy of your assignment response to avoid any unforeseen situation and append, if possible, a photocopy of this booklet with your response.

We wish you good luck.

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

Course Code: MIO-003

Course Title: Smart Urban Energy Systems and Smart Transportation Systems
Assignment Code: MIO-003/TMA/2026
Maximum Marks: 100

Note:

- 1. In any question, whenever we ask you to suggest an activity, we expect you to give one other than those covered in the units**
 - 2. For any question worth 5 marks the word limit is 200 words, for a 10 mark question it is 350 words.**
 - 3. All questions are compulsory. All questions carry equal marks.**
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|-----|----|--|---|
| Q.1 | a) | What is Solar Energy? Explain briefly the ways to produce solar energy. | 5 |
| | b) | What are the applications of Solar Energy in smart cities? Support your answer with the example of any city. | 5 |
| Q.2 | a) | What are the core objectives of smart storage mission? Explain the components of smart storage technologies. | 5 |
| | b) | What is smart lighting? Describe the goals and advantages of smart lighting. | 5 |
| Q.3 | a) | Define Smart Grid and Micro-Grid. How does a smart meter works in smart grid infrastructures? | 5 |
| | b) | What is SCADA? How does the smart grid work under SCADA? Support your answer with a schematic network. | 5 |
| Q.4 | a) | Explain the characteristics and advantages of metro rail system. | 5 |
| | b) | What are the different technologies used for Automatic Vehicle Identification System? | 5 |
| Q.5 | a) | What is Integrated Traffic Control System? Explain the application of CCTV based surveillance system. | 5 |
| | b) | What is the need for electric vehicles in the present situation of the entire world? How ITS can accelerate the growth of electric vehicles? | 5 |
| Q.6 | a) | What are the various types of electric vehicle system? Differentiate between battery and hybrid electric vehicle systems. | 5 |
| | b) | What is the kind of charging Infrastructure of Electric Vehicles? How a wireless charging system works for electric vehicles? | 5 |
| Q.7 | a) | What do you understand about connected vehicles? What are the features of connected vehicles? | 5 |
| | b) | Define Autonomous Vehicles. Describe the challenges of Autonomous Vehicles. | 5 |
| Q.8 | a) | Define the term Big-Data. Explain the application of Big-Data in Transportation sector. | 5 |
| | b) | Define IoT. How IoT and Big-Data can be utilized in providing better services to users in the transport sector. | 5 |

- Q.9 a) What are the different aspects where an ITS can be applied in the domain of road safety? 5
- b) What is smart mobility? How is it facilitating the last-mile connectivity? 5
- Q.10 a) What is the current status of EV's in India? What are the challenges for adoption of EV's in India? 5
- b) Describe the need and plan of Integrated Multi Model Transport System (IMMITS) for a city like Delhi and Mumbai. 5