

**DIPLOMA IN SMART CITY
DEVELOPMENT AND MANAGEMENT
(DSCDM)**

Term-End Examination

December, 2024

**MIO-003 : SMART URBAN ENERGY AND SMART
TRANSPORTATION SYSTEM**

Time : 3 Hours

Maximum Marks : 70

Note : (i) Attempt any **five** questions.

(ii) All questions carry equal marks.

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1. (a) What is Solar Energy ? Explain briefly the ways to produce solar energy. 7
 - (b) What is smart lighting ? Discuss the advantages and limitations of smart lighting. 7
 2. (a) Differentiate between micro-grid and smart grid. How does a smart meter work in smart grid infrastructure ? 7

- (b) What is SCADA ? Explain how it is helpful in energy transmission. 7
3. (a) Explain BRT system. Discuss its typical characteristics. 7
- (b) Explain typical characteristics of Metro-rail system. Discuss advantages associated with Metro rail system. 7
4. (a) What is Light Rail Transit (LRT) ? Discuss how it is different from other modes of public transport. 7
- (b) Explain the objectives and applications of Intelligent Transportation System. 7
5. (a) What are the different technologies used for Automatic Vehicle Identification System ? Discuss the applications of vehicle identification system. 7
- (b) What is meant by intelligent planning and scheduling ? Discuss different stages of intelligent planning. 7
6. (a) What are the different ticketing technologies ? Discuss the advantages and limitations of automatic ticketing technologies. 7

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- (b) What is integrated control system ?
Describe in detail about the data to be collected for the purpose of implementing Integrated Traffic Control System (ITCS). 7

7. Write short notes on any *four* of the following :

4×3.5=14

- (a) Area Based Traffic Control System (ATCS)
- (b) Split Cycle Offset Optimization Technique (SCOOT)
- (c) E-Challan System
- (d) Electric and Hybrid Vehicles
- (e) Vehicle Location Tracking
- (f) Big Data applications in Transportation System

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