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MIO-002

**DIPLOMA/CERTIFICATE IN SMART
CITY DEVELOPMENT AND
MANAGEMENT (DSCDM)/(CSCDM)**

Term-End Examination

December, 2024

**MIO-002 : SMART TECHNOLOGIES (HARDWARE
AND SOFTWARE)**

Time : 3 Hours

Maximum Marks : 70

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

1. What is IoT ? Explain IoT in healthcare with a suitable example. 10
2. What is Blockchain Technology ? Write and explain any *four* application areas of it with a suitable example. 2+8

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3. Discuss the benefits and challenges of block-chain technology in the education sector. 10
4. (a) What do you understand by Smart Grid ? Explain. 5
- (b) How is blockchain-based decentralized 'transactive electricity market' different from the 'conventional electricity market' ? Explain. 5
5. What is Artificial Intelligence (AI) ? Explain AI application being used in natural language processing with an example. 10
6. What is Industry 4.0 ? Compare Industry 1.0, 2.0, 3.0 and 4.0 with technologies used and its application areas. 10
7. What is BIG DATA in context of Smart City ? Write and explain the characteristics of big data with an example. 10
8. Discuss Artificial Intelligence (AI) and Machine Learning (ML) challenges in the realm of healthcare and transportation. 10

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9. Define actuator. What are the different applications of actuators in smart cities ? 10

10. Write short notes on any *two* of the following :

5+5

- (a) SMART GRID
- (b) A role of AI in self-driving cars
- (c) Industrial IoT

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