

B.Sc. First Year (Data Science) NEP Semester-II  
**BSCDS24 - Internet of Things Embedded System**

P. Pages : 1

Time : Two Hours



**GUG/S/25/15264**

Max. Marks : 40

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1. a) Explain IOT communication APIS. 4  
b) Explain communication protocols in IOT. 4

**OR**

- c) Write IOT functional blocks. 4  
d) What is cloud computing and data analysis? 4
2. a) Write about The Arduino IDE? 4  
b) Write the introduction of Raspberry Pi. 4

**OR**

- c) Write Raspberry Pi Programming. 4  
d) Describe Arduino programming with example. 4
3. a) What are the IOT Security protocols? 4  
b) Write Data link protocol and Network layer routing protocols. 4

**OR**

- c) Describe Network layer Encapsulation Protocol and Session Protocols? 4  
d) What are the Infrastructure protocols? 4
4. a) How can Arduino be used to remotely control external devices? Provide an example. 4  
b) Describe the different types of output devices used in Arduino for visual, physical, and audio responses. 4

**OR**

- c) Discuss any three Python packages used in IoT applications with Raspberry Pi. 4  
d) Explain how Arduino receives input from sensors and differentiate between analog and digital sensor readings. 4
5. a) How does IoT contribute to environmental monitoring and sustainability? 4  
b) Describe the applications of IoT in the energy sector. 4

**OR**

- c) How is IoT used in agriculture to enhance productivity? Mention any two use cases. 4  
d) Explain the role of IoT in smart cities with two examples. 4

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