

Code No: 183BG**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech II Year I Semester Examinations, February - 2024****INTRODUCTION TO IOT****(Common to IT, CSIT)****Time: 3 Hours****Max. Marks: 60****Note:** This question paper contains two parts A and B.i) **Part- A** for 10 marks, ii) **Part - B** for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART- A**(10 Marks)**

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|-------------------------------|-----|
| 1.a) Define computer network. | [1] |
| b) What is a sensor? | [1] |
| c) What are IoT components? | [1] |
| d) Define M2M. | [1] |
| e) Explain Python modules. | [1] |
| f) What is Raspberry Pi? | [1] |
| g) Define data processing. | [1] |
| h) What is DHT sensor? | [1] |
| i) What is PaaS? | [1] |
| j) Define smart home. | [1] |

PART - B**(50 Marks)**

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|---|-------|
| 2.a) What are characteristics of IoT? Explain in detail. | |
| b) Explain in detail about actuators role in IoT with examples. | [5+5] |
| OR | |
| 3.a) Discuss about physical design of IoT in detail. | |
| b) Describe communication protocols in detail. | [5+5] |
| 4. Explain about interoperability in IoT in detail. | [10] |
| OR | |
| 5. Discuss in detail about integration of Sensors and Actuators with Arduino. | [10] |
| 6.a) Explain about Python Packages of interest for IoT in detail. | |
| b) Discuss about Raspberry Pi board in detail. | [5+5] |
| OR | |
| 7.a) Discuss about interfacing an LED and Switch with Raspberry Pi. | |
| b) Discuss about environment case study to illustrate IoT design. | [5+5] |

- 8.a) Explain about remote data logging in IoT.
b) Write a brief introduction on data analytics. [5+5]

OR

- 9.a) Discuss about Network Function Virtualization (NFV) in detail.
b) Briefly explain about conventional network architecture and its limitations. [5+5]

10. Explain the following:
a) IoT Vs Industrial IoT
b) Activity monitoring. [5+5]

OR

11. Explain the following:
a) Connected vehicles
b) Complements of cloud computing. [5+5]

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