

Code No: 154CP**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech II Year II Semester Examinations, April/May - 2023****SENSORS AND DEVICES****(Computer Science and Engineering - IOT)****Time: 3 Hours****Max. Marks: 75****Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) List out the characteristics of IOT. [2]
- b) Discuss about actuators. [3]
- c) What are the differences between the machines in M2M and Things in IOT? [2]
- d) Discuss about the applications of M2M. [3]
- e) Enumerate the basic building blocks of IOT physical device. [2]
- f) Briefly describe endpoints. [3]
- g) Define sensor. Classify different types of sensors. [2]
- h) Write a short note on environmental parameters of a sensor. [3]
- i) What are Python Packages of Interest? [2]
- j) Enumerate cloud storage models. [3]

PART – B**(50 Marks)**

- 2.a) Describe briefly about the link layer and application layer in the physical design of IOT.
- b) Explain the following:
 - i) Cloud computing
 - ii) Embedded systems. [5+5]

OR

- 3.a) Illustrate about web socket based communication APIs.
- b) Explain the applications of IOT for agriculture. [5+5]

- 4.a) Discuss about the software defined networking for IOT.
- b) Explain about simple network management protocol. [5+5]

OR

- 5.a) How do data collection and analysis approaches differ in M2M and IOT?
- b) Discuss about YANG. [5+5]

- 6.a) Explain the serial interfacing with Raspberry Pi.
- b) Explain the importance of Python Programming. [5+5]

OR

- 7.a) Explain the interfacing of I2C with Raspberry Pi.
- b) Briefly explain the procedure of installation and execution using Raspberry Pi. [5+5]

- 8.a) Discuss about the switching power devices using transistors.
b) Explain the working principle of thermal expansion type thermometric sensors. [5+5]

OR

- 9.a) Illustrate about the bi polar stepper motor.
b) Explain the working principle of wireless Bluetooth sensor. [5+5]

- 10.a) Discuss the design of Python web application framework
b) Explain about amazon auto scaling policies. [5+5]

OR

- 11.a) Discuss about amazon relational data base service.
b) Illustrate the communication APIs Webserver policies and characteristics. [5+5]

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Used papers 2023