

**Code No: 154CP****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech II Year II Semester Examinations, February - 2024****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) What are the different characteristics of IoT? [2]
- b) Briefly write about wireless sensor networks. [3]
- c) Which limitation makes SNMP unsuitable for IOT systems? [2]
- d) What is the role of NETCONF server? [3]
- e) Write about external gadgets. [2]
- f) Write a note on Arduino. [3]
- g) What are the applications of transistor switches? [2]
- h) Write about Bluetooth sensor. [3]
- i) What is the role of ROUTER in WAMP? [2]
- j) Why API are important for business? [3]

**PART – B****(50 Marks)**

- 2.a) Discuss the role of cloud computing in the IoT.
- b) Explain the following:  
i) sensors ii) Actuators. [5+5]

**OR**

- 3.a) Briefly write about IoT Communication Models.
- b) Write about home and agriculture applications of IoT. [5+5]

- 4.a) Explain the data collection process in M2M.
- b) Explain the necessity of IoT system management. [5+5]

**OR**

- 5.a) Discuss Software defined Network with neat diagram.
- b) Give the differences between SDN and NFV for IoT. [5+5]

- 6.a) Write a python for sending an email on switch press.
- b) Explain with neat diagram about Raspberry Pi board. [5+5]

**OR**

- 7.a) Explain the serial interfacing with Raspberry Pi.
- b) Explain Raspberry Pi GPIO headers with neat diagram. [5+5]

- 8.a) Explain about unipolar and bipolar Stepper motors.  
b) Discuss about USB Sensors with neat block diagram. [5+5]

**OR**

- 9.a) Describe the steps involved in controlling AC power devices using relays.  
b) Discuss about temperature sensor using thermistor with neat block diagram. [5+5]

- 10.a) Explain briefly about the characteristics of cloud computing.  
b) Describe the architecture of Django application. [5+5]

**OR**

- 11.a) Explain in detail about Communication API webserver.  
b) Describe briefly about WAMP for IOT. [5+5]

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