

Total No. of Questions : 8]

SEAT No. :

PD4328

[Total No. of Pages : 2

[6403]-126

T.E. (Information Technology)

INTERNET OF THINGS

(2019 Pattern) (Semester - V) (Elective - I) (314445D)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

Q1) a) Explain in Brief IEEE 802.15.4 protocol. **[8]**

b) Explain Sensor deployment & Node discovery in detail. **[9]**

OR

Q2) a) Explain Application Layer Protocols MQTT and AMQP in short. **[8]**

b) Discuss Wireless Media Access Issues in Internet of Things. **[9]**

Q3) a) Explain Arduino. What are the different features of Arduino? Discuss digital, analog, and power pins of it. **[9]**

b) Draw and explain interfacing of robotic arm using raspberry pi with python program. **[9]**

OR

Q4) a) Draw and explain the interfacing of the DHT11 sensor with Node McU to upload data on cloud with the program. **[9]**

b) Draw and explain interfacing of Bluetooth speaker using raspberry pi with python program. **[9]**

P.T.O.

Q5) a) What is cloud storage? Explain Cloud Storage models (SaaS, PaaS, IaaS) in details. **[8]**

b) Explain the RESTful web API with its designing and development using Django Framework. **[9]**

OR

Q6) a) Write short notes on **[8]**

i) ThingSpeak

ii) Ubidots

b) Explain Challenges for Secure IOT, Threat Modelling in details. **[9]**

Q7) a) Explain how you will design a smart water management system for agriculture using IOT. **[9]**

b) Elaborate on how you will use IOT for remote health care. **[9]**

OR

Q8) a) Explain how you will design an energy management system in a commercial building using IOT. **[9]**

b) Explain how you will design a smart shipment management system using IOT. **[9]**

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