

Total No. of Questions : 8]

SEAT No. :

P-7624

[Total No. of Pages : 2

[6180]-144

**T.E. (Information Technology)
INTERNET OF THINGS
(2019 Pattern) (Semester - I) (314445D) (Elective - I)**

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.
- 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 detail application Layer Protocols MQTT and AMQP. [8]
b) Explain Piconet and Scatternet with Bluetooth. Explain advantages and disadvantages of Bluetooth. [9]

OR

- Q2)** a) What is Zigbee? Explain in detail ZigBee protocol stack. [8]
b) Explain data aggregation and dissemination in detail. [9]

- Q3)** a) What is an IoT Device? List different IoT Devices. Explain any 2 devices. [8]
b) Explain in detail Interfaces (Serial, SPI, I2C). [9]

OR

- Q4)** a) Draw and explain interfacing of input device (LED) using Arduino Uno with program. [8]
b) Why python is important in IoT? How python plays important role in the Raspberry Pi language than C or C++? [9]

- Q5)** a) Explain Data and message security and Non-repudiation and availability with respect to IoT security. [9]
b) Explain in detail Web server for IoT and role of Ubidots for Cloud in IoT. [9]

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OR

- Q6)** a) What is threat analysis in IoT? Explain threat analysis in detail. [9]
b) Explain Key elements of IoT Security Identity establishment and Access control. [9]

- Q7)** a) Explain in detail IoT Industry Applications - Machine Diagnosis and Prognosis, Indoor Air Quality Monitoring. [9]
b) Explain how you will design a smart water management system for agriculture using IoT. [9]

OR

- Q8)** a) What is role of IoT in health monitoring? Explain in detail any two application of health monitoring using IoT. [9]
b) Explain in detail How IoT can be used in home automation. [9]