

Total No. of Questions : 8]

SEAT No. :

P-488

[Total No. of Pages : 2

[6003]-709

T.E. (Information Technology)

INTERNET OF THINGS (Elective - I)

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

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates :

- 1) *Answers Q.1 or Q.2, 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) What is Bluetooth? Explain the following term of Bluetooth i) Piconet
ii) Scatternet. [9]

b) Explain in detail the MQTT protocol. [9]

OR

Q2) a) Explain Bluetooth protocol architecture. [9]

b) What are the development reasons for AMQP? Explain the AMQP model with its main elements. [9]

Q3) a) Draw and explain the interfacing of the LED using Raspberry Pi with the program. [8]

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

OR

Q4) a) What is Raspberry Pi? Explain OS installation steps. [8]

b) Draw and explain the interfacing of the servo motor using Arduino Uno with the program. [9]

P.T.O.

Q5) a) What are different IoT systems vulnerable? Also, explain IoT security challenges. [8]

b) What is cloud computing? Explain elements of cloud computing. Also, explain the characteristics of cloud computing. [9]

OR

Q6) a) Explain the use and design of a RESTful web API. [8]

b) Explain the following key elements of IoT Security: Identity establishment, Access control, Data and message security. [9]

Q7) a) Write short note on : [9]

i) Home Automation.

ii) Indoor Air quality monitoring.

b) Explain following IoT Applications i) Structural Health Monitoring ii) Smart Parking iii) Smart Road [9]

OR

Q8) a) Write short note on : [9]

i) Wearable Electronics.

ii) Smart Payments.

b) Explain how IoT is useful in environment - Weather Monitoring and Noise Pollution Monitoring. [9]
