

Total No. of Questions : 8]

SEAT No. :

PB-3864

[Total No. of Pages : 2

[6262]-128

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) What is Bluetooth? Explain in detail Bluetooth Technology. **[8]**

- b) List different application layer protocols? Draw & explain Message Queue Telemetry Transport (MQTT) protocol used in IOT with suitable examples. **[9]**

OR

Q2) a) Enlist & Explain Different IP Based Protocols used in Internet. **[8]**

- b) Explain how data Management done in IOT through Data Aggregation and Dissemination methods such as Flooding, Gossiping and SPIN. **[9]**

Q3) a) Differentiate between Arduino and Raspberry? Draw and explain interfacing of LED using Raspberry Pi with the Python code? **[9]**

- b) Draw and explain interfacing of Temperature & Humidity sensor (DHT 11) using Arduino with program? **[9]**

OR

Q4) a) What is Raspberry Pi. ? Explain Steps of Installation of OS of Raspberry Pi also Draw and explain interfacing of Switch & LED using Raspberry Pi with the Python code? **[9]**

- b) Draw and explain interfacing of DC Motor using Arduino with program? **[9]**

P.T.O.

- Q5) a)** What is mean by IOT Cloud? Explain Thing Speak Cloud with suitable example. [8]
- b)** Explain different types of possible security issues and attacks of IOT Systems. [9]

OR

- Q6) a)** Differentiate between SaaS, PaaS & IaaS. [8]
- b)** What is mean by IoT Threat modelling? What are the Steps for Threat modeling? Discuss Thread Modeling FRAMEWORKs: STRIDE & DREAD. [9]

- Q7) a)** Describe with suitable diagrams applications of IOT in Smoke/Gas Detector for Home Automation System. [9]
- b)** Explain applications of IOT in Retail Management for Inventory Management, Smart Payments? [9]

OR

- Q8) a)** Explain applications of IOT in smart Agriculture as a Smart Irrigation, Greenhouse Control? [9]
- b)** Describe with suitable diagrams applications of IOT in Smart Fitness & Health Monitoring? [9]

