

Total No. of Questions : 8]

SEAT No. :

**PB3781**

**[6262]-39**

[Total No. of Pages : 2

**T.E. (Computer Engineering)**

**INTERNET OF THINGS & EMBEDDED SYSTEMS**

**(2019 Pattern) (Semester-I) (310245 A) (Elective- I)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6 and Q.7 or Q.8.
- 2) Draw neat & labelled diagrams if necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume Suitable data, if necessary.

- Q1)** a) Discuss the various steps in IoT design methodology? [6]  
b) Demonstrate the use of RFID with the help of suitable IoT application. [6]  
c) Explain M2M communication in detail. [5]

OR

- Q2)** a) Describe device and component integration for IoT based home automation system. [6]  
b) Demonstrate the working of push-pull communication model using diagram with suitable application. [6]  
c) What are horizontal and vertical of IoT applications? [5]

- Q3)** a) What is 6LoWPAN? 6LoWPAN and EPC standardization. [6]  
b) Explain SCADA protocol standardization. [6]  
c) What is MQTT and explain in detail. [6]

OR

- Q4)** a) Explain LoRA based smart Irrigation system. [6]  
b) Explain MODBUS protocol in detail. [6]  
c) Examine that why ZigBee is popular than Wi-Fi and Bluetooth in IoT. [6]

**P.T.O.**

- Q5)** a) Define software define networking & Explain architecture of SDN. [6]  
b) Write a short note on cloud standardization. [6]  
c) Describe the IoT messaging mechanisms called WAMP (Auto Bahn for IoT). [6]

OR

- Q6)** a) Define Cloud of Things & What is cloud communication API? [6]  
b) Explain the Python Web application framework Django. [6]  
c) Explain the different cloud-based services offered by Amazon for IoT. [6]

- Q7)** a) Write a short note on Light weight cryptography. [6]  
b) What is Activity Modelling of Threats? & Explain access control issue with respect to IoT security. [6]  
c) What are the different vulnerabilities of IoT and how to handle? [5]

OR

- Q8)** a) Examine how threat model is useful in securing IoT applications. [6]  
b) List out security requirements for IoT base systems. & Discuss some vulnerabilities in IoT. [6]  
c) What are the challenges in designing the IoT application. [5]

