

Total No. of Questions : 10]

SEAT No. :

P3998

[Total No. of Pages : 3

[5353]-588

T.E. (Computer Engineering) (Semester - II)
EMBEDDED SYSTEM & INTERNET OF THINGS
(2015 Pattern)

Time : 2.30 Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer any five questions Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10.
- 2) Assume Suitable data wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Draw neat & labelled diagram wherever necessary.

- Q1)** a) What are the different characteristics that an embedded system should possess? [5]
b) Compare REST-based communication and WebSocket communication API [5]

OR

- Q2)** a) Explain the steps involved in the IoT system design methodology. [4]
b) Why do IoT systems have to be self-adapting and self-configuring? [2]
c) Explain WSN (the internet of transducers) pillar of IoT. [4]

- Q3)** a) What is SCADA ? What are the different blocks of SCADA [5]
b) Explain Functional view specification step of IoT system design methodology, consider smart IoT-based home automation system as an example. [5]

OR

- Q4)** a) With the help of appropriate diagram explain WebSocket-based communication APIs [3]
b) Draw and explain block diagram of an IoT device. [4]
c) What is Raspberry Pi? Explain 4 features of it [3]

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- Q5)** a) What are the different topology of 802.15.4? Explain with suitable diagram. [6]
b) What is BACnet? Explain the different layers function [6]
c) What are the challenges for securing IoT [4]

OR

- Q6)** a) Explain the Zigbee architecture with suitable diagram [6]
b) What are the issues with IoT Standardization, [4]
c) What is KNX? Explain KNX-TP features, its Telegram [6]

- Q7)** a) What is Web of Things (WOT) ? What are the two pillars of the web? Explain in brief. [6]
b) Explain the key elements of the ETSI M2M architecture. [6]
c) Explain Cloud of Things Architecture. [5]

OR

- Q8)** a) Explain Cloud Middleware Architecture. [6]
b) Explain RFID middleware standards? [6]
c) Explain unified multitier WOT Architecture in details. [5]

- Q9)** a) Design Weather Monitoring system, what are the different components required? draw deployment design for this system [6]
b) Write short note on [6]
i) Amazon Auto Scaling
ii) Xively Cloud for IoT
c) Explain python web application framework - Django. [5]

OR

- Q10)**a) Explain WAMP and its key concepts with diagram. [5]
- b) Explain in brief Model, Template and View in Django architecture [6]
- c) Design Air Pollution Monitoring(APM) based on followings [6]
- i) Define process specification for APM IoT system
 - ii) Domain model of APM IoT system
 - iii) Information model of APM IoT system
 - iv) Controller service of APM IoT system

