Total No. of Questions : 10]

SEAT No. :

P2996

[Total No. of Pages : 2

[5669]-588

T.E. (Computer Engineering) (Semester - II)

EMBEDDED SYSTEMS & INTERNET OF THINGS

(2015 Pattern)

Time : 2.30 Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Answer any three questions Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.***
2) ***Assume suitable data wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat & labelled diagram wherever necessary.***

Q1) a) Can an electronic tablet be listed as an embedded system? Justify your answer. **[4]**

b) Draw and explain all bits of CPSR (Current Program Status Register). **[6]**

OR

Q2) a) Define Internet of things and briefly explain its characteristics. **[6]**

b) Explain domain model specification step of IoT system design methodology, consider smart IoT-based home automation system as an example. **[4]**

Q3) a) Explain functional view specification step of IoT system design methodology, consider smart IoT-based home automation system as an example. **[7]**

b) Explain WSN (the internet of transducers) pillar of IoT. **[3]**

OR

Q4) a) Draw generic block diagram of IoT and explain functional attributes, based on which, number of modules are available in an IoT device. **[6]**

b) Write a Python program for blinking LED using Raspberry Pi or Beagle Bone board. **[4]**

Q5) a) Explain Mod Bus protocol in detail. **[7]**

b) Explain security model for IOT. **[6]**

c) Explain Identity Establishment issue with respect to IOT security. **[4]**

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OR

Q6) a) Explain KNX protocols in detail. **[7]**

b) List and explain possible vulnerabilities of IOT. **[6]**

c) What are the tangible results of the European Union SENSEI project? **[4]**

Q7) a) Explain unified multitier WOT Architecture in details. **[8]**

b) Explain M2M Middleware Standards in brief. **[4]**

c) Explain Business Intelligence associated with WOT. **[4]**

OR

Q8) a) Define Web of Things and explain two pillars of the web. **[8]**

b) Explain WSN Middleware Standards in brief. **[4]**

c) Write short note on cloud standards. **[4]**

Q9) a) Design smart irrigation system based on followings : **[7]**

i) Define process specification for smart irrigation IoT system

ii) Domain model of Smart irrigation IoT system

iii) Information model of Smart irrigation IoT system

iv) Controller service of Smart irrigation IoT system

b) Draw and explain the publish-subscribe messaging using WAMP-Auto Bahn. **[6]**

c) Briefly explain Xively Cloud for IoT. **[4]**

OR

Q10)a) With the explanation of key concepts of WAMP, draw and explain a WAMP session between client and router. **[7]**

b) Design Weather Monitoring system, what are the different components required? Draw deployment design for this system. **[7]**

c) Write a short note on cloud storage models and communication APIs. **[3]**

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