

Total No. of Questions : 10]

SEAT No. :

**P3632**

**[5560]-588**

[Total No. of Pages : 2

**T.E. (Computer Engineering)**  
**EMBEDDED SYSTEM & INTERNET OF THINGS**  
**(2015 Course) (Semester - II) (310252)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Answer any five 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 if necessary.
- 3) Figures to the right indicate full marks.
- 4) Draw neat & labelled diagram wherever necessary.

**Q1)** a) What are the Good qualities of RTOS? List any 4 RTOS. [5]

b) What is Publisher-Subscriber communication model with diagram. [5]

OR

**Q2)** a) Explain Purpose & Requirement specification step of IoT system design methodology, consider smart IoT-based automation system as an example. [5]

b) List the application layer protocol for IoT systems. Explain one of those in detail. [5]

**Q3)** a) Explain Earliest deadline and Rate monotonic scheduling algorithm with example. [5]

b) What is SCADA? Explain the components of it. [5]

OR

**Q4)** a) What is SoC? Explain major applications of SoC and benefits of it. [4]

b) What is the importance of service specification in IoT design methodology? [4]

c) Justify Raspberry Pi is suitable for IoT system? [2]

**Q5)** a) What are issues with IoT standardization? [5]

b) Explain the Modbus message framing and transmission modes. [6]

c) Explain Zigbee architecture with diagram. [5]

OR

**P.T.O.**

- Q6)** a) Explain the Zigbee node types and their functions. [6]  
b) Explain the functions of layers of BACNet protocol. [6]  
c) What are the challenges for securing IoT? [4]

- Q7)** a) Define: Web of Things. Explain pillars of the web? [6]  
b) Justify Cloud computing is the fusion of grid and SOA. [6]  
c) What is Cloud of Things Architecture. [5]

OR

- Q8)** a) Explain SoDA architecture with diagram. [6]  
b) Explain SaaS, PaaS & IaaS with example in Cloud Computing. [6]  
c) What is OSGi: The Universal Middleware? [5]

- Q9)** a) Design Weather Monitoring system, what are the different components required? Draw deployment design for this system. [4]  
b) Write short note on : [9]  
i) Amazon Auto Scaling.  
ii) Xively Cloud for IoT.  
iii) Amazon EMR.  
c) Explain WAMP protocol interaction between peers. [4]

OR

- Q10)** a) What is Django ? Explain model, template and view in Django. [6]  
b) Describe the use of Amazon Kinesis for IoT. [5]  
c) Discuss Air Pollution Monitoring system using IoT. Draw domain and controller model. [6]

